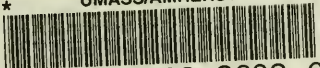


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CROP REPORT.

22
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Game protection.

Poultry raising.

Stock raising.

Western methods in New England orcharding.

Pear culture.

Farm census for 1910.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF MAY, 1909.

GAME PROTECTION.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, *Secretary.*

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APPROVED BY
THE STATE BOARD OF PUBLICATION.

CROP REPORT FOR THE MONTH OF MAY, 1909.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., June 1, 1909.

Herewith we present the first issue of the crop report for the current year. These bulletins will be issued monthly, on or about the first of the month, for the months from May to October, and will contain the usual information on crop conditions in Massachusetts and throughout the United States, and also special articles upon matters of interest to farmers and others interested in the tilling of the soil.

The special article in this issue is not on a subject which has to do with the raising of crops or the handling of farm animals, but which is nevertheless of timely importance to our farmers. It is by the State Ornithologist of Massachusetts, Mr. Edward Howe Forbush, and is on "The farmer's interest in game protection." Mr. Forbush has given the question of game protection a great deal of study, and is thoroughly posted on the subject. His work in this line, and in the protection of insect-eating birds, has been very valuable to the farmers of Massachusetts.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics, United States Department of Agriculture (Crop Reporter for May, 1908), estimates that on May 1 the area of winter wheat to be harvested was about 27,871,000 acres, or 2,478,000 (8.1 per cent) less than the area harvested in 1908, and 2,163,000 acres (7.2 per cent) less than the area sown last fall, 30,034,000 acres. The average condition of winter wheat on May 1 was 83.5, compared with 82.2 April 1, 89 on May 1, 1908, and 86, the average for the past ten years on May 1.

The average condition of rye on May 1 was 88.1, compared with 87.2 on April 1, 90.3 on May 1, 1908, and 89.1, the average for the past ten years on May 1.

The average condition of meadow (hay) lands on May 1 was 84.5, compared with 83.5 on May 1, 1908, and a ten-year average on May 1 of 89.5.

The average condition of pastures on May 1 was 80.1, compared with 92.6 on May 1, 1908, and a ten-year average on May 1 of 88.

Of spring plowing, 64.1 per cent was completed up to May 1, compared with 66.6 per cent on May 1, 1908, and a ten-year average on May 1 of 65.4 per cent.

Of spring planting, 51.9 per cent was completed up to May 1, compared with 54.7 per cent and 47 per cent on May 1, 1908 and 1907, respectively.

In Massachusetts the average condition of winter rye was given as 92; the average condition of meadows for mowing as 92; the average condition of spring pasture as 91; the percentage of spring plowing done as 30; and the proportion of spring planting done as 14.

WEATHER SUMMARY, JAN. 1 TO MAY 1, 1909.

[FURNISHED BY WEATHER BUREAU, BOSTON.]

January: The weather of the month was warmer than usual, the monthly mean temperatures ranging from 2° to 4° above the normal. The maximum temperatures ranged from 52° to 65°, and occurred generally on the 6th. The minimum temperatures ranged from 20° above to 14° below zero, and were generally on the 19th. The rainfall was in excess of the average, with a large proportion of the precipitation in some sections in the form of rain. The total snowfall of the month ranged from 3 to 18 inches. The month as a whole was mild.

February: Generally speaking, the weather conditions were a continuation of those of January, the temperatures for the month being in excess for all sections, the departures ranging from 2° to 6° above the February normals. There were no marked extremes in the maximum temperatures,

which ranged in the 50's. The minimum temperatures were somewhat high, ranging from 15° above to 10° below zero. The snowfall was unusually light, total amounts varying from a trace to 14 inches. The monthly precipitation, rain and snow, was considerably in excess of the average, being from 1 to 5 inches above the normals. At the close of the month the ground was generally bare of snow.

March: The weather of the month was without marked departures from that common to March. The monthly temperatures varied but little from the normals, and were irregular, being slightly above in some sections and below in others. The maximum temperatures ranged in the 50's, and the minimums were above zero in all sections. The snowfall of the month was light, generally below 2 inches, and the total precipitation was also deficient at nearly all stations.

April: The month was near the normal in temperature, with irregular variations. The monthly amounts of precipitation ranged from somewhat less than an inch to 3 inches above the normals. The maximum temperatures were rather high, ranging considerably above 80° in many sections. Spring floods on the rivers were common, and higher than usual. The waters of the Connecticut River were the highest since 1902, and in some localities were reported to be the highest since 1869. The high waters caused much damage to highways, railroads, bridges and dams.

TEMPERATURE AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM UNITED STATES NATIONAL WEEKLY WEATHER BULLETIN.]

Week ending May 17. — During the first three days of the week unseasonably cool weather prevailed over the districts from the Mississippi valley eastward. The night temperatures were decidedly low, and light frosts occurred as far south as Arkansas, Kentucky, and over the elevated portions of the Appalachian Mountain districts. Cool weather continued throughout the week in the Rocky Mountain, Plateau and Pacific coast districts, with freezing temperatures and frosts. Moderate temperatures prevailed over the Great Plains district, and during the latter part of the

week warm weather overspread all districts east of the Mississippi. Precipitation in sufficient amounts and well distributed during the week occurred over the lower Missouri, middle and upper Mississippi and portions of the Ohio valleys, Lake region, the northern part of the Middle Atlantic States and New England. But little precipitation occurred over the greater part of the south Atlantic and east Gulf States. Elsewhere precipitation was below the normal.

Week ending May 24. — Cool northerly winds prevailed over the greater part of the States from the Mississippi valley eastward, and there was much cloudy weather with moderate to heavy rains over the Gulf and Atlantic coast States. The mean temperature was below the normal over all districts east of the Mississippi River, except small areas along the immediate Gulf and South Atlantic coasts. Temperature variations between the Mississippi River and the Rocky Mountains were not decided. From the Rocky Mountains westward to the Pacific coast cool weather prevailed. General and locally heavy rains occurred from central Texas eastward over practically all portions of the Gulf States, and over the Atlantic coast States to southern New England. General rains occurred over the eastern portions of the Rocky Mountain district, becoming heavy over the Great Plains. From the middle and upper Mississippi valley eastward over the Lake region, northern portion of the Ohio valley, western Pennsylvania, and the greater part of New York and New England, there was a general lack of rainfall.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending May 17. — New England. Boston: Much cloudy weather during the week, with frequent showers, although the rainfall for the week was below normal, except in parts of the northern States. The temperature was changeable, being lowest on the 12th and 13th, when it was near freezing in some sections.

Week ending May 24. — New England. Boston: Cloudy weather prevailed during the week, with cool easterly winds

and low day temperatures. The rainfall was generally below normal, the amounts ranging from about one-tenth inch in Maine to one-half inch in the remainder of the section. Sunshine and warmer weather are needed.

THE WEATHER OF MAY, 1909.

The month opened with a general rain and unseasonably low temperatures, and the cool weather continued through the 5th. The rainfall of the 1st was quite heavy in some sections. During the remainder of the month there was much cloudiness, with frequent scattered showers. The rainfall, however, with slight exceptions was light, and the results at the end of the month showed a general deficiency in the total precipitation, the deficiencies ranging from 20 to 35 per cent over the State. The temperatures during the month were very irregular. On the 6th they ranged well into the 80's, but fell to 50° or below on the following day, and remained below the seasonal average through the 9th. From the 10th to the 15th was a warm spell, with the maximum temperatures ranging from 70° to above 80°, and during this period the daily averages were from 4° to 12° above the May normal temperatures. A cool term set in on the 11th, and the temperatures ranged from 4° to 14° below the average daily till the 23d. During the rest of the month the temperatures did not vary decidedly from seasonal conditions, though the tendency was to minus departures in the daily averages. The month as a whole was slightly cooler than the average May. There was an unusual prevalence of easterly winds, and a marked deficiency in the sunshine. There was considerable fog in coast sections, generally at night. The low temperatures and excessive cloudiness retarded vegetation.

In the circular to correspondents, returnable May 25, the following questions were asked:—

1. How does the present season compare, agriculturally speaking, with a normal season?

2. What is the promise for pastures and mowings, and did fall seeding winter well?

3. How did the bloom of apples, pears, peaches, plums and small fruits compare with the bloom of former years, and has it suffered from frosts?

4. What insects are doing the most damage in your locality?

5. How is planting progressing?

6. Is farm help scarce or plenty, and what proportion can be called good help?

7. What are the average wages paid farm help in your vicinity, with board? Without board?

8. Will there be any marked change in the acreage of the usual farm crops, particularly corn and potatoes, and do you note any new enterprises in agriculture?

Returns were received from 129 correspondents, and from them the following summary has been made up:—

THE SEASON.

The month opened about normal, and has been rather cold, cloudy and unpleasant. Vegetation seems to be fully up to the normal, and birds and early plants made their appearance at about the usual time. So far as farm work is concerned, the season seems to be behind the normal, from a week to ten days being the popular estimate. This is due to the prevalence of unpleasant rather than stormy weather, tending to prevent plowing and planting. There has been a light rainfall for the month, in spite of the large number of days on which some rain has fallen, and there is need of more rain soon for most crops. The prevalence of easterly and northerly winds has made the month seem much colder than it has really been.

PASTURES AND MOWINGS.

Pastures and mowings were somewhat injured by the long drought of last fall, and in some cases have not entirely recovered. The cool, damp weather has had an excellent effect on grass of all kinds, and elsewhere they are generally in

excellent condition. Grass has not made a very rapid growth, but is reported as very thick at the bottom, and to promise excellently for the future. Not much fall seeding was done last fall, as compared with the normal. Fields seeded early seem to have come through the winter in good shape, but late seeding got a poor start, and was ill prepared to stand the alternate freezing and thawing of a winter where the ground was bare of snow much of the time, and did not come through well in many sections.

FRUIT BLOOM.

The fruit bloom is generally reported to be heavy, except for winter apples, which are reported as light in some sections. Peaches, plums and pears bloomed full, taking the State as a whole, as did also strawberries. Small fruits were not generally in bloom at the time of making reports, but were well budded and promised a good bloom. The fruit bloom was perhaps a little later than usual, and winter apples were not in bloom in many sections at the time of making returns. There had been no frosts to do damage at the time of going to press. Light frosts were reported in a few sections, but not sufficiently heavy to be of injury.

INSECTS.

The cold spring generally operated to hold insects in check, and very little damage was reported. Almost half the correspondents report that there is no damage from insects. Thirty-seven report that tent caterpillars have appeared. The gypsy and brown-tail moths are evidently extending their areas, 7 correspondents mentioning gypsy moth caterpillars and 14 brown-tail moth caterpillars. Other insects mentioned are cut worms, onion maggots, currant worms, white grubs, potato bugs, wire worms, elm-leaf beetles, canker worms and asparagus beetles.

PLANTING.

Planting began early and progressed slowly, owing to frequent unpleasant days, and was probably about at the normal for the State as a whole at the time of making returns. Most correspondents report that gardens are made and potatoes planted, and some corn planted, while a few speak of planting as practically completed. Onions came up well, but tobacco beds were rather backward, and there were no reports that setting had begun.

FARM HELP AND WAGES.

There seems to be a fair supply of farm help to be had, — rather more than for several years. The usual complaint is made that little of the help to be had is really good help; and undoubtedly really efficient farm laborers are hard to secure, as the efficient men are constantly working out of the class of laborers into that of farmers, or getting work in other lines. Wages are about the same as last year, and relatively lower than in some previous years. Twenty dollars per month with board seems a fair average, and \$33 per month without board, but with tenement, milk and fuel. Help hired without these accessories is generally hired by the week or the day. The lowest wage reported for day labor, with one or two exceptions, is \$1.50 per day, with many higher prices reported. This class of help seems to be fairly plenty, but there has been a marked increase in the wages paid in the past few years.

ACREAGE OF FARM CROPS.

There will be a marked increase in the acreage of corn, and a slight increase in that of potatoes. This increase, following the increase of last year in corn acreage, shows a very healthy condition. Our farmers must raise more grain, the high prices making it imperative, and of all grains corn seems to be best adapted to our conditions. There are some reports of decreased acreage of tobacco and increased acreage of onions, but not enough to make any very material difference in the total acreages.

NOTES OF CORRESPONDENTS.

(Returned to us May 24.)

BERKSHIRE COUNTY.

New Marlborough (E. W. RHOADES). — Spring work opened early. Mowings, both old and new seeded, came through the winter well. Peach trees are blossoming very full, also plums and cherries; apple bloom rather uneven. There is a large acreage of potatoes already planted, and many farmers are planning to put in more corn than usual. Very good farm help can now be obtained. Wages average \$25 per month with board and \$1.50 per day and \$35 per month without board. There seems to be a scarcity of good young cows, with a brisk demand, especially for Holsteins, and many calves of that breed are being raised. Quite a number of promising colts are also being raised.

West Stockbridge (J. S. MOORE). — The season is about an average one. Pastures and mowings look promising, and unless the unexpected happens, there will be a good hay crop. The fruit bloom is uneven, in some sections full and in others none, altogether less than usual. Currant worms are the only insects that have appeared. Farm help is scarce, and from one-third to one-half is good help. Wages range from \$20 to \$25 per month with board and average \$1.50 per day without board. There will be about the usual acreage of corn and potatoes.

Becket (WM. H. SNOW). — The season is very cold and late, and there is not much planting done yet. Grass looks well, but there are some small spots winter-killed, especially fall seeding. Plums and cherries are a full bloom, and the prospect for the apple bloom is good. Some tent caterpillar nests are to be seen. Farm help is scarce, especially those who can milk. Wages average \$20 per month with board and \$1.50 per day without board. More oats were raised last year than in previous years, and as large or a larger acreage will be sown this year.

Washington (E. H. EAMES). — The season is very backward as regards planting. Fall seeding wintered well, also pastures and mowings. The fruit bloom is fully up to former years. No insects are doing damage at present. Planting is progressing very slowly, and is only about half completed. There is no good help, and help of all

kinds is scarce. Wages range from \$30 to \$35 per month and from \$1.50 to \$1.75 per day without board. There will be no marked change in the acreage of farm crops.

Peru (F. G. CREAMER). — The season is a little backward. Pastures and meadows look well, and fall seeding caught well. The fruit bloom is not out yet. No insects are doing damage at present. There will be a large acreage of potatoes. Farm help is scarce. Wages average from \$20 to \$25 per month with board and \$1.50 per day without board.

Hancock (B. H. GOODRICH). — The ground is cold and dry for the season of the year, and the season is late. Fall seeding generally wintered well; old mowings winter-killed a trifle only. Apples are not yet in bloom, but seem to be well budded; pears fair; plums heavy; no apparent damage from frosts. Tent caterpillars are doing a little damage. Planting is progressing slowly, very little corn having been planted as yet. A number of farmers are getting help through the State Labor Bureau, which is a decided help. Wages average \$18 to \$20 per month with board and \$1.25 per day without board. There will be no change in the acreage of the usual farm crops.

Cheshire (J. L. NORTHUP). — The season compares very favorably with a normal season. Pastures and mowings are in good condition. The fruit bloom compares favorably with former years, and has not suffered from frost. Insects have not appeared in this vicinity as yet. Planting is progressing, but is a little backward on account of cold, wet weather. Farm help is in about the usual supply. Wages range from \$20 to \$25 per month with board and average about \$35 per month without board. There is about the usual acreage of farm crops.

New Ashford (WALTER L. SMITH). — The season is about a week late. The dry weather of last fall hurt pastures for this season. Plums and cherries are in full bloom; apples not yet in bloom; no damage from frost. No insects are doing damage as yet. Planting is progressing rather slowly owing to the late spring. Farm help is scarce, and one-half of it is fairly good. Wages range from \$20 to \$25 per month with board and from \$35 to \$40 per month without board. There will perhaps be a slightly larger acreage of potatoes than last year; corn, oats, etc., about the same.

Williamstown (S. A. HICKOX). — The season is about a normal one at present. The fruit bloom was normal, and there have been no frosts as yet. There are no insects doing damage. Planting is making good progress. Farm help is not plenty. Wages average \$20 per month with board and \$30 per month without board. There will be no marked change in the acreage of any crops, and there is nothing new in agriculture, but our farmers are showing more than the usual interest in clover.

FRANKLIN COUNTY.

Rowe (N. E. ADAMS). — The season is a good average one. Pastures and mowings are in very good condition, and fall seeding is in fair shape. The fruit bloom has not yet appeared, and there has been no damage from frosts. No insects are doing damage as yet. Planting is about a week behind the normal. We have a very good lot of farm help. Wages range from \$20 to \$28 per month with board and from \$1.50 to \$1.75 per day without board. There will be rather more potatoes than usual planted, and a larger amount of corn for ensilage.

Leyden (FRANK R. FOSTER). — The season promises well. Pastures were badly hurt by last season's drought, and are short this spring in consequence. Fruit trees all bloomed very full. Planting is progressing slowly, on account of cold, wet weather. Help by the month is scarce, day help fairly plenty and good. Wages range from \$20 to \$25 per month with board and average \$1.75 per day without board. There will be a larger acreage of corn and potatoes than usual.

Bernardston (R. H. CUSHMAN). — The season is about ten days late for planting, but the growth of vegetation is normal. Grass is looking very well, but badly winter-killed in places; pastures are in good condition. There is a very full fruit bloom, but Baldwins and Northern Spies are not up to the average; no frost as yet. Cloudy weather with low temperature has held most insects in check. Planting is somewhat late, but is being pushed now. There is more help to be had than usual, and of a better class. Wages range from \$20 to \$25 per month with board and average \$1.50 per day without board. There will be larger acreages of potatoes, corn and oats than usual.

Conway (L. T. HOPKINS). — The season is very backward. Pastures and mowings are looking well, and fall seeding wintered well. Pear and peach bloom fair; strawberries and fall apples good; winter apples not yet out. The weather is too cold for insects. But little planting has been done, aside from potatoes. There is a fair supply of farm help available, and we can have some choice. Wages average from \$15 to \$25 per month with board. Potatoes and corn will show fully average acreages.

Deerfield (DWIGHT A. HAWKES). — The season is about eight days late. Pastures and mowings promise well, and fall seeding wintered well. There is a normal fruit bloom, with no damage from frosts. No insects are doing damage as yet. Planting is being delayed by cold, wet weather. Farm help is plenty, and three-fourths of it good. Wages average \$20 per month with board and \$1.50 per day without board. More onions and corn will be grown than usual.

Whately (C. L. CRAFTS). — The season is somewhat backward, owing to cold weather. Grass is in excellent condition, and fall seeding is looking very well. There is about the usual fruit bloom, with no frosts to do damage as yet. There are no insects doing damage at

present. Potatoes and onions are all planted, and corn nearly so; tobacco not yet transplanted. Farm help is plenty, but of inferior quality. Wages average from \$20 to \$25 per month with board and from \$30 to \$38 per month without board. There will be increased acreages of corn, potatoes and onions, and less tobacco.

Montague (A. M. LYMAN). — The season is a fair one, but a week late. Pastures and mowings are in good condition, and fall seeding is all right. There is a good average fruit bloom, and no damage from frosts. Currant worms have appeared, and tent caterpillars are numerous on the wild cherries. Potatoes are all planted; corn perhaps half in; early gardens are looking well. There is enough fairly good help to be had. Wages average \$22 per month with board and \$40 per month or \$1.50 per day without board. There will be a considerably increased acreage of corn, and about the same acreage of other crops. The growing of Japanese millet for seed is carried on extensively as a money crop; it is easy to grow, the labor being done mostly by machinery.

Northfield (T. R. CALLENDER). — The season is somewhat late. Pastures and mowings are in unusually good condition, and fall seeding is looking well. All fruit trees bloomed abundantly, with no damage from frosts. There is no complaint of insect damage as yet. Planting is delayed by wet weather of the past week, but is generally well advanced. Good help is always scarce. Wages range from \$20 to \$25 per month with board and average \$1.75 per day without board. There is more corn in process of planting than for many years. I note one field of alfalfa, sown last fall without inoculation with soil from old fields, or any special preparation, which stood the winter well, is now well stocked and stands seven or eight inches high.

Erving (CHAS. F. CLARK). — The season is an average one at this time. The prospect is good for both pastures and mowings, and fall seeding wintered well. The fruit bloom is above the average, and it has not suffered from frost. I do not know of any damage being done by insects. Planting is progressing slowly. Farm help is fairly plenty, and half of it is good help. Wages average \$25 per month with board and \$40 per month without board. I do not think there will be any marked change in the acreage of farm crops.

HAMPSHIRE COUNTY.

Greenwich (WALTER H. GLAZIER). — The season has been cold, and not up to the normal. Pastures and mowings are in excellent condition, and fall seeding is looking finely. There is a fair fruit bloom at present, and no injury from frost. I have noticed no insects to date. There is but little farm help hired in our town. Wages range from \$15 per month upwards with board and average \$1.50 per day without board. There will be no marked change in the acreage of farm crops.

Prescott (W. F. WENDERMUTH). — The season is cold and backward,

from ten days to two weeks late. Fall seeding wintered well, and pastures and mowings are in good condition. The fruit bloom is not fully out at this time; apples light; pears and plums full; peaches very few; strawberries and peaches suffered from frost. No insects have appeared except the tent caterpillar. Scarcely any planting has been done as yet, except gardens and a few potatoes. There is the usual supply of farm help, and it is all fairly good. Wages range from \$20 to \$25 per month with board and average \$1.50 per day without board. There will probably be a slight increase in the acreage of forage crops. The quantity of milk going to the Springfield market will be somewhat increased over last year.

Pelham (J. L. BREWER). — The season is an average one, except for a slight excess of moisture. Pastures and mowings are looking finely, and fall seeding wintered well. The fruit bloom is abundant, and there is no damage as yet by frost. Cut worms and grubs are doing some damage. Planting is delayed by rain. Corn will be planted quite generally in increased areas.

South Hadley (W. F. PERSONS). — The season is late. Pastures and mowings are doing well, and fall seeding is in good condition. The apple bloom is not up to the average, and there is no damage from frost. There are no insects doing damage as yet. There is plenty of poor help, and one-half the whole supply is good help. Wages average \$20 per month with board and \$1.50 per day without board. There will be about the usual acreage of corn and potatoes.

Easthampton (WM. C. CLAPP). — The season is backward, with very few warm days to date. The prospect is good for the hay crop, and most fall seeding is looking well. There is a good bloom on apples; not many pears, peaches or plums grown; no damage from frost. Currant worms, cut worms, tent caterpillars and potato bugs have all put in an appearance. Potatoes are mostly planted, and early garden truck mostly up; corn planting delayed by cold, wet weather. The supply of farm help seems to be equal to the demand. Wages range from \$18 to \$25 per month with board and average \$1.50 per day without board. There will be more than the usual acreage of corn and potatoes.

Southampton (C. B. LYMAN). — The season is about normal for grass; other crops late. Pastures and mowings are in very good condition, and fall seeding wintered very well. There is quite a full fruit bloom, and no damage from frost. Planting is progressing slowly, on account of the wet weather. Farm help is not very plenty nor remarkably good. Wages average \$18 or \$20 per month with board and \$1.50 per day without board. There will be an increased acreage of corn and potatoes.

Goshen (ALVAN BARRUS). — The season is probably two weeks later than usual. The promise for pastures and new seeding is good. Pears, peaches and plums have bloomed well; apples and many small fruits

not yet fully developed. Here and there a tent caterpillar is seen, but there is very little damage from insects. Good farm help at living prices is out of reach. Wages range from \$25 to \$30 per month with board and from \$1.50 to \$1.75 per day without board. There is no apparent change in the acreage of farm crops.

Chesterfield (HORATIO BISBEE). — The season is cold, wet and backward. Pastures and mowings are looking well; there was but little seeding done last year. Pears are in full bloom; apples not yet out to any extent; no frost as yet. There are no insects doing damage. On account of much wet weather, but little planting has been done, aside from potatoes. There is a fair amount of help to be had, and mainly good help. Wages average \$20 per month with board and \$1.50 per day without board. There is much more corn being planted than usual, and a slight increase in potatoes.

Middlefield (J. T. BRYAN). — The season is several days later than usual. Pastures and mowings are in excellent condition. There is a full bloom of all fruits, and no damage from frost. There is no damage from insects as yet. Very little planting has been done, owing to the cold, wet weather. There is plenty of good help. Wages average \$20 per month with board and \$1.50 per day without board. More corn than usual will be raised if we have suitable weather for planting.

HAMPDEN COUNTY.

Tolland (EUGENE M. MOORE). — The season has been rather cold and wet. Pastures and mowings are looking finely. Fruit trees and small fruits have bloomed full, and there have been no frosts to injure them. Planting is progressing slowly, on account of cold weather. Farm help is scarce, especially good help. Wages average \$1 per day with board and \$1.50 without board. More corn and potatoes will be planted than usual.

Blandford (ENOS W. BOISE). — The season is late and cold. Pastures and mowings are in good condition, but fall seeding is not. There was a full bloom of all fruits, without damage by frosts. No insects of any account have appeared as yet, though a few tent caterpillars are seen. There is more farm help offered than in past years, but not over half of it is reliable. Wages range from \$18 to \$25 per month with board and from \$1.50 to \$1.75 per day without board. More corn than usual will be planted. It has been so cold and wet that there has been but little planting done.

West Springfield (T. A. ROGERS). — The season is hardly up to the normal, the weather being cool and rather wet. All grass land looks well, and fall seeding generally wintered well. Apples, peaches and plums made a full bloom; pears not full; all kinds of berries look well. There are no insects except an occasional nest of tent caterpillars. Planting is from ten days to two weeks behind the normal. There seems to be plenty of help, and perhaps half of it is good help. Wages

range from \$25 to \$30 per month with board and from \$35 to \$40 per month without board.

Agawam (J. G. BURT). — The season is two weeks late. Pastures and mowings are in good condition, and fall seeding looks well. The fruit bloom was full, and has not suffered from frosts. I have not seen any insects as yet. Planting progresses slowly, owing to cold weather. Help is plenty, such as it is; one-half is called good help. Wages average from \$20 to \$25 per month with board and from \$35 to \$40 per month without board. There will be more corn and potatoes planted than usual.

Chicopee (E. L. SHAW). — The season is behind the normal for everything except grass and grain. Pastures and mowings are looking well, but late fall seeding winter-killed. There was a full fruit bloom, with no damage from frost. The season appears to be too cold for insects. Planting is delayed by the weather. Help is more plenty than usual, but the quality does not improve much. Wages average \$25 per month with board and range from \$1.25 to \$1.50 per day without board. There will be a smaller acreage of potatoes and a larger acreage of corn planted than usual.

Monson (F. D. ROGERS). — The season appears to be a normal one. Early fall seeding is looking well, but late seeding winter-killed somewhat. Apples and pears are not blooming very well, except some varieties of early apples; peaches and plums bloomed profusely; no damage from frost. Tent caterpillars are quite plenty, but cold weather has kept them from doing much damage. Planting is delayed by the cold weather. Help is not over plenty, but there is about all our farmers care to use. Wages range from \$18 to \$25 per month with board and average \$1.50 per day without board. There will be more corn planted than usual, and more fruit trees are being set out, especially apple trees.

Palmer (O. P. ALLEN). — The season compares favorably with the normal. Pastures and mowings promise well, and fall seeding wintered well. The fruit bloom is better than the average, and there has been no damage from frost. Insects are not much in evidence as yet. Planting is progressing slowly, on account of the backward season. Farm help is rather scarce, and about one-fourth of it good help. Wages average \$18 per month with board and \$1.50 per day without board. There will be no marked change in the acreages of the usual farm crops.

WORCESTER COUNTY.

West Brookfield (MYRON A. RICHARDSON). — The season has been cooler, with more rainfall than we have had in years. Pasturage has not looked better in years, and fall seeding wintered well. Fruit trees have bloomed fuller than usual, on account of frosts, those that did not bear a year ago, owing to frosts, being loaded this year. Insects have not appeared as yet. Planting is backward. Farm help is

plenty, and two-thirds of the supply good help. Wages range from \$15 to \$25 per month with board and from \$35 to \$45 without board. There will be a slight increase in the acreage of corn, but nothing of moment on other crops.

North Brookfield (JOHN H. LANE). — The season is two weeks late, and cold, but with no freezing temperatures. Pasturage is late, and there is still more or less feeding at the barn. There is a good fruit bloom, and it is very fortunately uneven, leaving better chances for next year. There are only a few small caterpillars and some black beetles in the insect line, and they have done no damage as yet. Planting is progressing very slowly, — must, while fur coats are still worn. Ten per cent of the available farm help is good help. Wages range from \$20 to \$30 per month with board and from 15 to 17½ cents per hour without board. There is a large acreage under the plow, and there is likely to be a large acreage of potatoes; the weather is so cold that farmers are not enthusiastic about planting corn.

Oakham (JESSE ALLEN). — The season is good, but backward. Pastures and mowings look well, and fall seeding wintered well. There is a light apple bloom; other fruits full; no frost as yet. No insects have appeared except a few tent caterpillars. Planting is nearly completed. Farm help is rather scarce and unreliable. More corn will be planted than usual.

Petersham (B. W. SPOONER). — The season is late, there being no corn planted at this date. Pasturage is looking well, and cows are little fed at the barns. Peaches showed a full bloom; apple bloom not fully out, but promises fairly; no frost as yet. No insects are doing damage. Planting is progressing very slowly, but potatoes are mostly in. Farmers are better supplied with help this year than usual. Wages average about \$25 per month with board and from \$1.50 to \$1.75 per day without board. Farmers are planning to plant more corn this year than usual; acreage of potatoes about average.

Hubbardston (CHAS. C. COLBY). — The season to date has been cold and backward. Pastures and mowings are looking well, with the outlook for a heavy crop of hay. The fruit bloom is very full, and without injury from frost to date. I have not noted any damage from insects. Planting is progressing slowly, owing to the cold, wet weather. Farm help is fairly plenty, but good help is difficult to get. Wages average \$20 per month with board and \$1.75 per day without board. There will be an increased acreage of corn and potatoes, especially corn.

Winchendon (ARTHUR STOCKWELL). — The season is very backward. The promise for pastures, mowings and fall seeding is very good. The fruit bloom is not as good as that of last year. Very little planting has been done. There is plenty of help to be had at present. The wages paid average about the same as in former years. There will be no marked change in the acreage of any of our staple crops.

Ashburnham (E. D. GIBSON). — The season is too cold and wet to plant much as yet. Grass in pastures and mowings looks well, and fall seeding wintered fairly well. It is too early to report on the fruit bloom. Tent caterpillars are plenty, but no other insects have appeared as yet. Farm help is scarce, and not half that available is good for anything. Wages range from \$20 to \$30 per month with board and from \$1.50 to \$1.75 per day without board. The acreage of corn and potatoes will be increased, particularly of corn. Farmers are coming to think that more grain must be grown at home, and I think that we shall see a return to the old custom of growing corn, oats and barley, and even some wheat.

Gardner (W. E. KNIGHT). — The season is rather cold and backward. Pastures and mowings are looking well, and fall seeding came out well. Fruit trees have not blossomed as yet. Tent caterpillars are doing some damage. Planting is progressing well. Help is fairly plenty, but good help is always scarce. Wages average \$25 per month with board and \$1.50 per day without board.

Fitchburg (DR. JABEZ FISHER). — The season seems to be an average one. Grass seems to have wintered well. So far as the fruit bloom has passed, it would seem to be an average one, with no frost. No insects are doing damage as yet. Planting is still progressing slowly. Wages average \$20 per month with board and \$1.50 per day and upwards without board, with help of all kinds scarce. There will be some increase in the acreage of both corn and potatoes.

Sterling (HENRY S. SAWYER). — The season is late, cold and wet. Pastures and mowings are looking well, and also fall seeding. There is more than an average bloom of all fruits, with no injury from frost. Planting is late, with not much corn planted yet. Good help is scarce, hardly one-half the supply being good. Wages average \$25 per month with board and \$1.50 per day without board.

Bolton (H. F. HAYNES). — Grass of all kinds looks well. There has been no frost to hurt the fruit bloom, which is about normal. No insects have appeared as yet. Planting is progressing very slowly. Farm help is scarce, and not quite as high in price as usual. Good help receives \$1.75 per day without board. There will be no great change in the acreage of farm crops.

Southborough (E. F. COLLINS). — The present season is a little late, but with warm weather will soon be normal. All grass is looking well, but is thin in places, owing to last year's drought. Very large apple bloom; peaches fair; no damage from frost. There will be more than the usual amount of spraying for the codling moth. Planting is well advanced, and will be finished this month. Farm help is reasonably plenty, and about two-thirds of it is good help. Wages range from \$20 to \$25 per month with board and from \$30 to \$50 per month without board. There will be a 10 per cent increase in the acreage of corn and potatoes.

Leicester (H. H. KINGSBURY). — This is considered a backward season. Pastures and mowings are in good shape, as well as fall seeding. Pears, peaches, cherries and plums show full bloom; apple bloom not out yet. Tent caterpillars are the only insects present. Planting is much delayed by the cold, cloudy weather. As usual, good farm help is scarce. Wages average \$25 per month with board and \$35 without board. The acreage of corn and potatoes will be increased this season.

Auburn (WM. GILBERT). — The season is a little better than normal, as we are having more rain than usual. Pastures and mowings promise well, and fall seed wintered well. All fruit trees blossomed well, and the small-fruit bloom is extra full. Cut worms are doing considerable damage. Planting is delayed, on account of so much cold and rain. Farm help is very scarce, and only about 30 per cent can be called good help. Wages average \$25 per month with board and run from \$1.50 to \$2 per day without board. There will be an increase of 75 per cent in the corn acreage.

Mendon (J. J. NUTTER). — The season is cold and backward. Pastures and mowings are backward. The fruit bloom is fully up to an average, and there has been no damage from frost. Planting is progressing as well as can be expected for the cold and backward season. Farm help is scarce, and but a small proportion of it good help. Wages average about the same as in recent years. More corn will be planted than usual.

MIDDLESEX COUNTY.

Sudbury (EDGAR W. GOODNOW). — The season is forward. Pastures and mowings are looking well, and fall seeding wintered well. There is a good bloom of all fruit, and it has not suffered from frost. Insects appear to be doing very little damage. Planting is progressing rapidly. Farm help is plenty, and about half of it good help. The wages paid to farm help range from \$20 to \$25 with board and from \$35 to \$40 per month without board. Farmers will raise more corn than usual this year, owing to the high price of grain.

Maynard (L. H. MAYNARD). — The season is late, and extremely cold weather has prevailed. Pastures and mowings promise well, and fall seeding wintered well under exceedingly unfavorable conditions. The apple bloom is about half of a normal bloom; there are an unusual number of dead peach trees; other fruits about normal, with no damage from frosts. Gypsy and brown-tail moth caterpillars are numerous, also asparagus beetles, potato bugs and cut worms. Planting is progressing slowly. Good farm help is scarce, only a small per cent being really good. Wages range from \$20 to \$25 per month with board and from \$1.50 to \$2 per day without board.

Stow (GEO. W. BRADLEY). — The season is a little later than usual, I should say. Pastures and mowings look finely, but late fall seeding

is not looking as well. There is a very good fruit bloom, with no damage from frost as yet. Tent caterpillars are working somewhat, also some brown-tail moth caterpillars. Potatoes are about all planted, and a good deal of corn, both field and sweet corn; some garden truck remains to be planted. Farm help is quite scarce, and there is very little good help. Wages range from \$15 to \$30 per month with board and from \$1.50 to \$2 per day without board. I think there will be more corn than usual planted, owing to the high prices of grain.

Westford (J. W. FLETCHER). — The season is about an average one. Pastures and mowings are in good condition, and fall seeding wintered well. There is a full bloom for all fruits, and no damage from frost. The brown-tail moth caterpillars are numerous. Planting is progressing well. Good help is scarce. Everyone is planting corn.

Dunstable (A. J. GILSON). — The season is from ten days to two weeks later than the normal. Pastures and mowings promise well, and fall seeding wintered very well. The bloom on apples and peaches is very light; pears, plums and small fruits compare well with other years; no damage from frost. Insects are very scarce at present. Planting is progressing slowly. Farm help is very scarce. Wages range from \$20 to \$25 per month with board and from \$9 to \$10 per week without board. The acreage of corn and potatoes will be increased this year.

Concord (WM. H. HUNT). — The season is about average, but the last week has been very cold. Fall seeding has done well, and pastures and mowings look well. Fruit trees have blossomed quite well, and strawberries look unusually well. There are a good many tent caterpillars and brown-tail moth caterpillars. About the average amount of planting has been done. There is plenty of poor help, but good help is scarce. Wages range from \$15 to \$25 per month with board and are about \$17 more per month without board. Some farmers have planted less garden truck and more Indian corn than usual.

Lincoln (C. S. WHEELER). — The season is two weeks late. Pastures and mowings are in good condition, and fall seeding wintered well. Apples made a fair bloom; pears good; peaches and plums fair; small fruits generally good. Gypsy moth caterpillars are doing some damage. Cold and wet weather has delayed planting, and some sweet corn will be replanted. Farm help is fairly plenty, and half of it is good. Wages range from \$20 to \$25 per month with board and from \$35 to \$40 per month without board. There will be no great change in the acreage of farm crops; if anything, there will be more sweet corn and ensilage corn planted than usual.

Winchester (SAMUEL S. SYMMES). — Field crops are backward, but foliage is about normal. Pastures and mowings are in fine shape, and fall seeding wintered well. The apple bloom is heavy, except on Baldwins; other fruits show full blooms. There are very few insects

in sight. Ground is in good order; corn and beans up and peas hoed. Help is plenty, and 50 per cent of it is good help. Wages average \$25 per month with board and \$9 to \$11 per week without board. The past week has been very cold and cloudy, with but little rain. Crops are growing very slowly.

Stoneham (J. E. WILEY). — The season is backward. Pastures and mowings are in good condition, and fall seeding wintered well. The bloom on apples and pears is fine, and there has been no damage from frost. No insects are doing damage as yet. Planting is progressing slowly. There is not enough farm help employed to give estimates as to the supply and price. There will be no marked changes in the acreage of farm crops.

Weston (HENRY L. BROWN). — The season is in advance of the normal in some ways, and backward in others. Pastures are in good condition; old mowings light, others good; early fall seeding wintered well, while late has been backward. Fall apples have a good bloom, Baldwins a light bloom; peaches, pears and plums good; small fruits not yet in bloom. Gypsy and brown-tail moth caterpillars and the San José scale are doing damage, the scale being the most serious. There is enough farm help, such as it is. Wages average \$20 per month with board and \$35 per month without board. There will be no marked change in the acreage of farm crops. Early sweet corn is up, and looking well; potatoes are slow in coming up; peas are somewhat backward, but look well.

Newton (G. L. MARCY). — The season is cold and backward. Pastures and mowings are in good condition, and fall seeding promises well. The pear bloom is light; other fruits normal; no damage from frost. No insects have appeared as yet. Planting is progressing slowly. There will be no marked change in the acreage of farm crops. The milk contractors are running the local dealers out of business.

ESSEX COUNTY.

Salisbury (WESLEY PETTENGILL). — The season has been cold, and everything is backward. Pastures and mowings are looking well, and fall seeding wintered well. Apple trees have not bloomed as yet; pears a fair bloom; peaches and plums full blooms. The woods are full of brown-tail moth caterpillars. Planting progressing slowly, owing to cold weather. Wages range from \$20 to \$25 per month with board and from \$1.50 to \$1.75 per day without board. I think there will be more corn planted this year than usual.

Amesbury (F. W. SARGENT). — The season is a normal one. Pastures and mowings are in fair condition, and fall seeding wintered well. Winter apples seem to have a light bloom, though it is not fully out yet; peaches and plums good. Tent caterpillars and brown-tail moths are doing some damage. Planting progressing very well. Farm help is more plentiful than for some years, and of fair quality. Wages

average \$20 per month with board and \$1.50 per day without board. More corn than usual will be planted, there having been a slight increase each year for the past few years. The weather has been backward, cold and cloudy, but land has been in workable condition for more time than usual.

Andover (MILO H. GOULD). — The season is very backward. Pastures and mowings look well, but fall seeding is not in as good condition. We have had no frost to hurt the fruit bloom so far; winter apples are not blooming well; other fruits about as usual. Brown-tail moths and tent caterpillars are doing some damage. Planting is progressing slowly, as the season has been too cold and wet. Farm help is scarce. Wages average \$20 per month with board and \$40 per month without board. More corn than usual will be planted, and about the usual acreage of potatoes.

Topsfield (B. P. PIKE). — The season started early, but is now about average. Pastures and mowings are in very good condition, and fall seeding wintered well. There is a very good bloom of all kinds of fruit. There are plenty of brown-tail moth caterpillars. Planting is progressing very well. Good help is very scarce. Wages average \$25 per month with board and \$40 per month without board. There will not be any marked change in the acreage of farm crops, a slight increase in corn, but not much.

Rowley (D. H. O'BRIEN). — The season is very backward. The promise for pastures and mowings is good, and fall seeding wintered well. Apples show a fair bloom; other fruits above the average, with no damage from frosts. Gypsy and brown-tail moth caterpillars are doing damage. Farm help is in fair supply, with 50 per cent of it good help. Wages average \$25 per month with board and \$1.50 per day without board. Planting is progressing slowly, on account of cold, wet weather. There will be an increase in the acreage of corn; other crops normal.

Danvers (CHARLES H. PRESTON). — The season is backward. Pastures and mowings promise well, and fall seeding wintered well. The fruit bloom is better than average on those trees that have bloomed. Gypsy moth caterpillars are very abundant, but any damage done by them does not show as yet; brown-tail moth caterpillars are also plenty, with some tent caterpillars. Planting is well along. Farm help is scarce. Wages average \$23 per month with board. There is no marked change in the acreage of farm crops.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES). — The season is about a normal one. Pastures promise well, and there is the prospect of a heavy crop of hay; fall seeding wintered well. The fruit bloom is about normal, with no damage from frosts. No insects are doing damage at present. Farm help is scarce, and only a small proportion of it is good help. Wages

range from \$20 to \$25 per month with board and from \$1.50 to \$1.75 per day without board. There are no marked changes in the acreages of the various farm crops.

Stoughton (CHARLES F. CURTIS). — I consider that the season is a normal one. Pastures look well, and mowings have a very thick bottom; fall seeding came through the winter well. The fruit bloom is late this year, but does not appear to have suffered from frost. Planting is about a week late. Gypsy and brown-tail moth caterpillars have appeared. Farm help is scarce, and about 20 per cent of it is good help. Wages average \$25 per month with board and \$2 per day of 9 hours without board. There will be no marked change in the acreage of crops raised for market.

Canton (EDWIN V. KINSLEY). — The season is very favorable so far. Pastures and mowings are in very good condition, and cattle are turned out; fall seeding wintered well. Apples, pears, peaches and plums and all small fruits which have bloomed have a very heavy bloom. There is no damage from insects as yet. Planting is a little late, on account of wet weather. Farm help is very scarce, and not 1 in 10 is good for much. Wages range from \$18 to \$30 per month with board and from \$1.50 to \$2 per day without board. The acreage of farm crops is probably increased. Milk is in fair supply, but no surplus; good dairy cows very high.

Walpole (EDWARD L. SHEPARD). — The season is late, but everything is looking very well. Pastures and mowings are looking well, also fall seeding. The fruit bloom is above the normal; no damage from frost as yet. Gypsy moth caterpillars and some tent caterpillars have appeared. Planting is progressing slowly, on account of the lateness of the season. Wages average about \$25 per month with board and about \$45 per month without board. Farm help is scarce, and about half of it fairly good. There is about the usual acreage of farm crops, and no new enterprises in agriculture.

Millis (E. F. RICHARDSON). — The season is very backward. Pastures and mowings are in excellent condition, and fall seeding wintered well. There is a small bloom on all fruit, but no damage from frost. Insects have not commenced to do damage as yet. Farm help is scarce, and three-quarters of the available supply is good help. Wages range from \$22 to \$28 per month with board and from \$45 to \$60 per month without board. There will be no marked change in the acreage of the usual farm crops.

Franklin (C. M. ALLEN). — The season compares well with the normal. The promise for pastures and mowings is good, and fall seeding wintered well. Apples show a good bloom; pears, peaches and plums light; small fruits good. Planting is mostly done. There is plenty of poor help, and very little good help. Wages average \$20 per month with board and range from \$1.50 to \$2 per day without board. A warm April and a cold May have started grass early, and made it forward and thick set.

BRISTOL COUNTY.

Attleborough (ISAAC ALGER). — The season is about an average one. Pastures, mowings and fall seeding are all looking well. Apples, plums and strawberries show a full bloom. No insects have appeared as yet. Planting is progressing fairly well. Farm help is plenty, and half of it is good help. Wages average \$20 per month with board and \$1.50 per day without board. There will be more corn planted, and the acreage of potatoes will be about the same as usual.

Mansfield (WM. C. WINTER). — Vegetation is generally about a week late. Indications for pastures and mowings are quite promising, and fall seeding wintered well. Apples show a normal bloom; pears below average; peaches and plums fair, but injured by frost; small fruits normal. No insects have appeared except currant worms. Very little planting has been done so far. There is probably all the farm help that is wanted, but it is lacking in experience. Wages range from \$1.50 to \$1.75 per day without board. The acreage of the various farm crops will be about as usual.

Seekonk (JOHN W. PECK). — The season is favorable, except that excessive, cold rains have made it from a week to ten days late. Pastures and mowings never looked better, and fall seeding looks well. The fruit bloom is above the normal, with no injury from frost. The striped cucumber beetle is the only insect I have seen. Planting is progressing finely, considering the weather; low grounds were hard to get onto early in the season. Farm help is plenty now, mostly Portuguese, and three-quarters of it is good, reliable help. Wages average \$25 per month with board and \$9 per week without board for good help. I do not think the acreage of farm crops is increased.

Dighton (HOWARD C. BRIGGS). — The season is late. Pastures and mowings are in good condition, but fall seeding is looking poorly. There was an average fruit bloom, and no frost. Elm-tree beetles are doing some damage. Planting is late, on account of much rain. Farm help is scarce and of poor quality, and not over 25 per cent of it is good help. Wages average \$25 per month with board and \$45 per month without board. There is a great increase in the acreage of corn; that of other crops average.

Acushnet (M. S. DOUGLAS). — The season is much later than usual. Pastures and mowings are looking well, and fall seeding wintered well. There have been no frosts, and fruit trees have bloomed heavily. No insects have appeared as yet. Planting is rather backward, on account of rain and cold weather. Farm help is scarce, and good help is not to be had. Wages average \$20 per month with board and \$1.50 per day without board. More corn than usual will be planted, and also potatoes. Market-garden crops are backward; peas have not come up well nor made the growth they should. Strawberries have bloomed heavily, and promise a large crop.

PLYMOUTH COUNTY.

Brockton (DAVIS COPELAND). — The season is about a normal one. Pastures and mowings look well; fall seeding that was done early wintered well, late-sown not so well. There was a very full bloom on all kinds of fruit, and it has not suffered from frost. There are some black flies, but the weather has been so cold that insects have not done much. Planting is progressing rather slowly. Farm help is not very plenty, and only a small part of it is good help. I think there will be more corn planted than usual.

Hanover (HARRISON L. HOUSE). — The season is rather late. Pastures and mowings are in good condition, and fall seeding wintered well. The fruit bloom is normal, with no damage from frosts. No insects have appeared as yet. Planting is progressing slowly, on account of cold weather. Farm help is scarce. Wages range from \$25 to \$30 per month with board and from \$1.75 to \$2 per day without board. There is very little farming on a large scale done in this vicinity, mostly small gardens for home use.

Hanson (FLAVEL S. THOMAS, M.D.). — The season has been cold and wet, and crops are backward on low land and fair on high land. Pastures, mowings and fall seeding are in fine condition. There is a good fruit bloom, and no damage from frost. Cut worms have been doing some damage. Planting is progressing fairly well. Farm help is plenty and good. Wages range from \$1.50 to \$2 per day without board. Most of our farmers do not hire much, just neighbors to help for a few hours or a few days. There will be an increase in the acreage of corn.

Halifax (MRS. GEORGE W. HAYWARD). — The season is colder and wetter than usual. Pastures and mowings are in good condition, and fall seeding wintered well. All fruit trees had a full bloom, and there has been no frost so far. Tent caterpillars are doing some damage. The farmers are almost through planting, all but corn on wet land. Help is not as scarce as it was last year, and some of it is good help. Wages range from \$15 to \$30 per month with board, and most of our farmers hire that way; wages average \$1.50 per day without board. Rather more corn than usual will be planted.

Carver (J. A. VAUGHAN). — There has been more rain than usual. Pastures, mowings and fall seeding are in good condition. There is a good full bloom of all kinds of fruit, and not much damage by frost. Currant worms and a few tent caterpillars have appeared. Planting is later than usual. Most of the help is foreign, and not many of them know how to do all kinds of farm work. Our farmers do not board their help; wages average \$1.65 per day without board. About the usual acreage of farm crops will be put in. Many acres of swamp are being cleared and set with cranberry vines.

Lakeville (NATHANIEL G. STAPLES). — The season is a little late,

with plenty of rain. Pastures and mowings are in fair condition, and fall seeding wintered well. There is a very full bloom of all fruit, with no damage from frost. There are no insects as yet. Farm help is scarce, and about half of it is good help. Wages average \$25 per month with board and \$1.75 per day without board. There will be an increased acreage in corn and potatoes.

Rochester (GEO. H. RANDALL). — The season is somewhat late and wet, delaying planting considerably. Pastures and mowings are very promising, and fall seeding wintered well. The fruit bloom has been abundant on almost all trees except those that fruited heavily last year. Some currant worms and a few tent caterpillars have appeared. Farm help is scarce, and a very small per cent is good help. Wages average \$20 per month with board and \$1.50 per day without board. There is about the usual acreage of potatoes and an increased acreage in corn.

BARNSTABLE COUNTY.

Bourne (DAVID D. NYE). — The season compares favorably with the normal. Pastures and mowings are looking well; little fall seeding is done here. All fruit trees bloom better than last year, and the present outlook is good. There are no insects at present except a few tent caterpillars on wild cherry trees. Planting is progressing very well; about all the potato crop is in, and most of the corn and small truck. Farm help is very scarce, but most of what we can get is very good. Wages average \$20 to \$22 per month with board and \$2 to \$2.25 per day without board. There will be increased acreages of corn and potatoes.

Mashpee (W. F. HAMMOND). — The season is about an average one. Pastures and mowings are above the average, and fall seeding is looking well. All fruit trees have bloomed very full. Cut worms and tent caterpillars are doing some damage. Planting is about two-thirds done. Farm help is plenty, and most of it is good help. Wages average \$1 per day with board and \$2 per day without board. There will be an increased acreage of both corn and potatoes.

Barnstable (JOHN BURSLEY). — The season has been cold, but nearly all vegetation is as far advanced as usual. Pastures, mowings and fall seeding are all looking well. There is a very full fruit bloom. Tent caterpillars are doing some damage. The weather is cold, and planting is a little slow. Farm help is rather scarce, and about 25 per cent of it good help. Wages average \$25 per month with board and \$1.75 per day without board. There will possibly be a trifle larger area devoted to both potatoes and corn.

Truro (JOHN B. DYER). — The season is a very fair one, a good, wet spring having started things well. Pastures and mowings are in good condition, and fall seeding is fairly good. There is a good bloom of most all fruits, but a frost a few days ago did some damage. Planting is progressing well. Farm help is not plenty, mostly big boys and

good of its kind. Wages average from \$15 to \$20 per month with board for boys from sixteen to twenty, and 15 to 20 cents per hour without board. There seem to be no new departures in agriculture in sight.

Dennis (JOSHUA CROWELL). — The season is about an average one, though the past week has been very cold. Pastures and mowings are in good condition. The fruit bloom was very full, with no damage from frost. Tent caterpillars are doing some damage. Planting is somewhat delayed by the cold weather of the last week or ten days. The supply of farm help is just about equal to the demand, and one-half of it is good help. Wages average 20 cents per hour for good help. There will probably be an increase in the acreage of corn; no change in other crops.

Wellfleet (E. S. JACOBS). — The season is about a normal one. Pastures and mowings are looking finely, and fall seeding looks well. All fruit bloom is rather backward, being retarded by cold weather. Tent caterpillars are doing some damage. Planting is progressing rather slowly. Farm help is very scarce, and not more than one-fifth of it is good help. Wages average \$25 per month with board and from \$2 to \$2.50 per day without board. There are no marked changes in the acreage of the various farm crops.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — The season is later than usual. Pastures and mowings promise well; very little fall seeding has been done here. The bloom on fruit is as forward as usual; no frosts to do damage. There is no damage from insects as yet. Planting is progressing very well. The supply of farm help is about equal to the demand, and about 1 in 4 is good help. Wages range from \$18 to \$30 per month with board and from \$1.50 to \$2 per day without board. There will be about the usual acreage of all farm crops.

NANTUCKET COUNTY.

Nantucket (H. G. WORTH). — The season is about a week late. Mowings and pastures promise well; not much fall seeding done last year. There is no fruit of any account grown in this county. Tent caterpillars are the only insects that have appeared as yet. Planting is fully up to the normal in rate of progress. Farm help is scarce and most of it is poor. Wages average \$25 per month with board and from \$1.50 to \$1.75 per day without board. There will be about the usual acreage of all farm crops. Quite a number of acres of cranberry bog have been set this spring.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

THE FARMER'S INTEREST IN GAME PROTECTION.

By EDWARD HOWE FORBUSH, *State Ornithologist of Massachusetts.*

INTRODUCTION.

It is unfortunate that so many farmers evince little or no interest in game protection. Some regard game laws as of no advantage to the farmer, but rather as class legislation for the benefit of the sportsman. Nevertheless, the protection of game affects the agriculturists more vitally than any other element of our population. The farmers own the greater part of the land, and the game is more accessible to them than to any other class, for they live upon the land where the game is. Game conservation is advocated under our present system not solely to furnish sport for a limited number of individuals, but to protect the useful species of birds and mammals for the benefit of the whole people. Rational game protection should so work out as to restrict injurious species to some extent, to protect the land owner against law-breaking, trespassing hunters, and to create a community of interest between the farmer and the sportsman. The principle that the game is the property of the State is now well established in this country, and has been sustained by the higher courts; but by means of laws against trespass, which have been enacted simultaneously with the game laws, the farmer has been given practical control of the game so long as it remains on his land, and the exclusive privilege of hunting it there during the open season. In Massachusetts he is even allowed by law at any time to kill deer that are injuring his crops, and also to collect damages from the State for such injury. Game laws tend to limit the number of hunters and to shorten the season during which hunting is legal. They also protect most insect-eating birds at all times, and abolish the trapping and netting of game. Were it not for these laws, the farmer would be continually annoyed by the tramping of hunters through his fields at all seasons, the tearing down of his pasture walls and fences and the shooting of birds in the nesting season.

Some game birds are very valuable to the farmer as insect and weed destroyers; some game mammals, on the contrary, are some-

times destructive to his crops or trees; but the farmer who takes advantage of the laws enacted for the prevention of trespass, the protection of crops and the conservation of game and birds, may thereby add to his prosperity as well as to his pleasure in life, and by fostering the increase of fish, game and birds he may make life more attractive to his boys, and thus help to keep them on the farm. This paper will be devoted mainly to the material advantages that the farmer may derive from the protection of wild game, and particularly game birds.

ECONOMIC VALUE OF GAME BIRDS.

High among the valuable destroyers of insects and weeds we must rank the bob-white, commonly known in New England as the quail. This bird has not only an esthetic value, by reason of its bright, lively presence and its cheery call, but it is also one of the chief feathered helpers in field and garden.

Dr. Judd of the Bureau of Biological Survey gives some interesting records obtained by a study of its food.¹

The contents of the stomachs of 801 bob-whites were examined by the experts of the survey; over 50 per cent of the food consisted of seeds, the bulk of this being weed seeds. One bird had in its stomach 1,000 seeds of rag weed; another had eaten no less than 5,000 seeds of the troublesome pigeon grass. As each bird eats two or more meals a day of this character during the season when weed seeds may be found, a few flocks of such birds might do much to limit the production of weeds on any farm. Dr. Judd estimates that the bob-whites of Virginia consume 573 tons of weed seeds between September 1 and April 30. Examining the insect food of this bird, he finds that many of the most important insect pests of the United States are eaten in quantities. Cucumber beetles, bean leaf beetles, May beetles, click beetles and their progeny the wireworms, weevils, among them the notorious Mexican cotton boll weevil, potato beetles, spinach flea beetles, grape vine beetles, corn bill bugs, chinch bugs, cut-worms, cotton worms, boll worms, southern tobacco worms, army worms, garden caterpillars, grasshoppers, locusts and ants are found in its bill of fare. It is one of the few birds that are very destructive to the Colorado potato beetle and the chinch bug. Without question the bob-white or quail is one of the birds that the farmer should strive to protect. The ruffed grouse, the heath hen, the wild turkey, the introduced pheasants, the woodcock and the snipe, — all have a greater or less value as insect destroyers, and most of these birds feed upon the seeds of weeds.

Wild ducks may be of great service during any outbreak of insect pests in the fields. They are destructive to grasshoppers, locusts and army worms. Most of the non-game birds of the farm are particularly

¹ Judd, Sylvester D. The Economic Value of the Bob-white. Year Book, United States Department of Agriculture, 1903, pp. 193-204.

beneficial. In a report of the Secretary of Agriculture on the work of the Biological Survey, transmitted to Congress with a special message by President Roosevelt on Dec. 21, 1907, it is estimated that the sparrows of the United States saved the farmers of the country in 1906 \$35,000,000 by the destruction of weeds; and that a single species of hawk saves the farmers of the western States \$175,500 a year by the destruction of grasshoppers and field mice. It will pay the farmer, therefore, to promote the protection of nearly all the birds of the farm, and to lend his influence to the enforcement of the game laws, for the birds that are distinctly injurious are not protected.

THE ECONOMIC VALUE OF GAME MAMMALS.

The native game mammals of Massachusetts consist of squirrels, hares, commonly called rabbits, and deer. The woodchuck, raccoon, fox and other mammals, although hunted, are usually classed as vermin. Squirrels are of some service as tree planters, for they distribute the seeds of nut-bearing and cone-bearing trees far and wide; also they destroy insects, for a time, in the summer. Under protection, however, they are likely to so increase in numbers as to become destructive to birds, nuts, fruit and grain.¹ Rabbits, when numerous, destroy young trees: and deer, under the same conditions, attack young fruit trees and vegetables. Therefore the farmer has not the same economic incentive for conserving mammals that he has for protecting birds. Nevertheless, all these animals add to the attractiveness of country life. And if the laws are so framed as to give to the owner of the land an opportunity to protect his property from their inroads, and to take a reasonable number for food, the game mammals may be considered as of considerable value to the farmer.

FINANCIAL BENEFITS DERIVED FROM GAME.

Under the present laws the game on the farm may be so conserved and handled as to bring in an annual cash revenue to the farmer. Owing to the laws which prohibit the sale of grouse and woodcock, these birds cannot be marketed; but quail, wild fowl, shore birds and hares or rabbits may still be sold in our markets. Ordinarily, however, the farmer will find it more profitable to lease his land for shooting purposes than to sell the game in the market. Associations of farmers and sportsmen have been formed, in which the farmers grant shooting rights on their property to a limited number of sportsmen, and the sportsmen agree to protect the farm property from poachers. In other cases the protection of the farm property is left to the farmer. In Rockford township, Illinois, a farmers' association was organized in 1901, each member of which had the right to grant to any one the privilege of hunting on his farm in his company. All

¹ Gray squirrels are now (1909) protected at all times; but undoubtedly this law will be amended or repealed if squirrels become too numerous.

undertook to promote the strict enforcement of the game laws. Seventy-five members were enrolled, representing 12,000 to 15,000 acres of land. The system under which this association worked was so complete that poaching and trespassing were nearly eliminated. Notwithstanding the shooting done, prairie chickens and quail increased in numbers, while insect-eating birds became abundant.¹

A somewhat similar system is in operation in North Carolina. Exclusive shooting privileges over farm lands are secured by the sportsman either by paying the owner a certain sum per acre, or by paying all taxes on his real and personal property. The sportsman or the sportsmen's club may thus lease several farms. The lease does not interfere in any way with the rights of the owner to cultivate the land, or with his residence thereon. Planting is encouraged. Many of the lessees furnish the farmers with cow peas or grain for planting, that the quail may have better food and cover, and this planting is often carried out on a large scale. Some of these lessees employ game keepers to destroy the natural enemies of the game and to keep watch for law breakers. Thus the farmer is relieved from some of the trouble and annoyance of guarding his property and prosecuting poachers. This system has become very popular among the southern farmers, and the game is regarded as one of the assets of the farm. In Guilford County more than 150,000 acres have been leased out in this manner, and there are in the State some large preserves, varying in size from 9,000 to more than 18,000 acres. This system, as applied in the south, has a tendency to better the condition of the agricultural population, and to give the children of the farmers better educational facilities. Under the laws of North Carolina special taxes are imposed for the support of the school system, and the farmers, realizing that their taxes are paid by the sportsmen, are more likely to vote additional funds for school purposes. Thus the game helps to educate the children.² This system has brought additional prosperity to the region, and has increased the numbers of game and birds. It gives the farmer opportunities to furnish boats and teams to the hunters, and he and his boys receive some employment as guides and helpers.

This system has not made much headway in Massachusetts, but farmers who have given it a trial are well satisfied with the result. A number of farmers in southeastern Massachusetts, who have learned the value of the bob-white, find that they can maintain a good stock of these birds by combining, and leasing the shooting rights. Their lands are not much wooded, and are more easily guarded against poachers and trespassers than the wooded lands in some other parts of the State. This may account, in a measure, for their success.

¹ Palmer, Theodore S. *Some Benefits the Farmer may derive from Game Protection*. Year Book, United States Department of Agriculture, 1904, p. 518.

² Some of the South Carolina lands are poor and rather barren, and where the rights are taken by the acre the annual rental averages only about 6 cents per acre, — a sum which would look small to Massachusetts farmers.

The principal difficulty in finding lessees for shooting rights lies in the scarcity of the game, but this drawback can be remedied. Wherever the game is protected against excessive shooting, and where such natural enemies of the game as lynxes, cats, foxes, raccoons, minks, weasels, rats, crows and bird hawks are held in check by the game-keeper, the game soon becomes abundant. In some cases it increases so fast that considerable shooting becomes necessary to prevent excessive increase and the consequent spread of infectious diseases, which are very fatal on an overcrowded game preserve. In this latitude the bob-white is sometimes nearly exterminated by severe winters; but much of this excessive mortality might be avoided by giving the birds a little care, protection and food. The woodcock needs only suitable cover and protection. The ruffed grouse or partridge is hardy, and may be made numerous on any preserve which contains good cover and an abundant supply of food. The wooded hillsides of Massachusetts, interspersed with swampy hollows, are the natural paradise for this king of game birds; and there is much rocky and swampy land that is of little value for anything but the production of timber and game. The pinnated grouse or heath hen ought to thrive under protection on much of the sparsely wooded land in southeastern Massachusetts. The increase in the numbers of these birds on Martha's Vineyard since they have been made the wards of the Fish and Game Commissioners gives hope that they may recover their lost ground. Snipe and certain shore birds will gather on any suitable marshes where they are not continually molested, while ducks may be attracted to ponds, streams or fens by a few call or decoy ducks, or by wild rice or a supply of grain for food.

The principal objection urged by the opponents of the system of leasing shooting rights and the establishment of game preserves is that the policy is un-American, and that it gives over the shooting privileges into the hands of the wealthy few, thus depriving the many of the right to take game that belongs to the whole people. It may be admitted that the system is un-American, for the American policy of destruction which has been so successful in the past allows unlimited freedom to all to take or destroy every living wild thing upon the face of the earth. Such license was necessarily permitted during the time of settlement; but unless the people are restrained in their rapacious tendencies, as population increases the extinction of all wild game will result. Already the day of open and free shooting in the east has passed. The occupation of the market hunter has become intermittent and precarious, and necessary laws have been enacted, — too late, indeed, to save some species of our game, but in time to prevent the destruction of others. As population increases, the number of shooters will increase; and the present system of game protection must and undoubtedly will be changed to follow that of other countries, which, although more thickly settled than our own,

have nevertheless an abundance of game in fields and coverts as well as in their markets. In the mean time, under inadequate protection our own supply has been continually decreasing.

If we are to have game in the future, we must strictly regulate hunting, and adopt some system of game preserving, coupled with artificial propagation of game. The policy of licensing hunters, which is just coming into effect in New England, will largely restrict the number of hunters, particularly the alien hunters; and this is a long step in the right direction. Ignorant foreigners, who come here without knowledge of our laws and with the idea implanted in their minds that liberty in the new country means license to do as they please, should not be allowed to shoot at all or to range the country at large, unless some means can be provided by which they may be controlled and identified. Many of these people shoot all kinds of mammals and birds for food, and the license fee of \$15 exacted of them (for hunting) stops most of the hunting by this class; while those who continue to hunt must carry an identifying license, and have it ready for the inspection of the citizen or game warden. But even with the alien eliminated from the field there will still remain an army of hunters so vast that, with free shooting allowed, the game will have little chance except in remote regions.

Under our present system, the only salvation of the game is to prohibit its sale and thus remove the incentive for market shooting. But with the advent of artificial propagation and scientific game preserving the sale of such species as can be reared in captivity or produced in large numbers on game preserves may be permitted, and may even become necessary as a means of encouraging propagation. Unless some such plan is adopted, we shall soon have no game in our markets except such as is imported from foreign countries. The demand for game will continue, and it remains for our people to decide whether they will produce it here or send thousands of dollars abroad for it. Our country is so large that it is not probable that the greater part of it ever will be occupied by game preserves, as is the case in some European regions; therefore, the overflow from these preserves will still afford shooting for the people in the country surrounding them. It is undoubtedly true that the rich have advantages over the poor under this system, as in many other respects, and they always will have certain advantages under any system; but it is also true that the farmer is in a position to derive some benefits from the expenditure of the rich man's money in support of a system of game preserving which, while it interferes to a certain extent with free shooting, provides an abundance of game in regions where without it and under the old system there would be no game at all.

The above is not written for the purpose of advocating any change in our system of game laws, to approve the European system of game preserving, or to recommend laws permitting the sale of game; but merely to point out the logical tendency of a movement which

already has gained a strong foothold in this country, and to show the farmers the benefits that they may derive from the inevitable extension of this system.

THE ARTIFICIAL PROPAGATION OF GAME.

The rearing of native upland game birds in confinement is still a subject of experiment, and never has been made a financial success; but enough has been accomplished to prove that it is possible to rear the ruffed grouse, the pinnated grouse and the bob-white in domestication. Mallard ducks, black ducks, wood ducks, teal, Canada geese and a few other species have been reared successfully. When such birds as wood ducks and Canada geese find a ready market alive at from \$5 to \$15 a pair, or more, those who understand the business of rearing them ought to make a profit. Pheasants may be sold at similar prices, and at present they will bring about \$3 per pair, food value, in some of our markets. The writer introduced in the Massachusetts Legislature of 1908 a bill framed to permit the sale of pheasants in the markets. This bill, although altered somewhat from the original draft, passed to be enacted in such form as to allow the shooting and sale of these birds if taken by the owner on his own land under permit from the Massachusetts Commissioners on Fisheries and Game. Any successful pheasant raiser in Massachusetts ought now to be able to dispose of all the birds that he can rear. If the people take advantage of this law, enough of these birds should be raised by farmers and sportsmen to make them plentiful in our markets. The ring-necked pheasant, which is the species most commonly reared, is not a conspicuous success as a wild game bird in Massachusetts; but it has succeeded better, under the adverse conditions surrounding game birds here, than has any other introduced species. It thrives best, however, if given some care and protection, and it needs to be fed in winter. As a half-domesticated game bird, artificially propagated, protected and fed by man, it is unexcelled. Its general distribution throughout the State under protection is not desirable, for it carries diseases that are fatal to native game birds; and where it becomes numerous it is destructive to certain crops, and consumes the food of quail in winter. But if reared in inclosures while young, and allowed to run half wild on the grounds of the owner, it makes a very desirable addition to the supply of game for the table, and therefore will probably take the place in our markets of some of the native game birds now illegally sold.

A general open shooting season for pheasants would prevent them from becoming over numerous, and thus constituting a menace to our native game birds. In the mean time, those who wish to propagate or protect pheasants have now their opportunity.

Deer may be reared in pastures and sold alive at a profit. The rearing of game in inclosures or on preserves must be depended on to help in solving the problem of the game supply of the future.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF JUNE, 1909.

POULTRY RAISING.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, *Secretary.*

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
UNDER ACT OF CONGRESS OF JUNE 6, 1900.

BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1909.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

CROP REPORT FOR THE MONTH OF JUNE, 1909.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., July 1, 1909.

The crop report for June forms the second issue of the current year. At the close of the bulletin will be found an article on "Economy in labor in poultry keeping on farms," by Mr. John H. Robinson, editor of "Farm-Poultry." There is an impression that poultry requires a great deal of care to make it profitable to maintain a flock. While it is true that the large profits per hen can only be obtained by constant care and a great deal of labor, it is equally true, on the other hand, that a medium-sized flock of hens may be kept profitably on the farm with very little labor, if the proper methods are followed. The profit per fowl will be smaller than where more intensive methods are used, but the profit per hour of time spent in its care will be greater. Mr. Robinson has given a great deal of attention to this matter and is in a position to give many valuable suggestions to those who are interested in this particular part of farming operations. The farm flock of poultry should form a much more important source of revenue than it does on the average farm, and this article points out how it may be most easily made to do so.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture estimates the area sown to spring wheat to be about 18,391,000 acres, or 1,183,000 acres (6.9 per cent) more than that sown last year. The condition of spring wheat on June 1 was 95.2, as compared with 95 on June 1, 1908; 88.7 in 1907; and 92.6 the June 1 average of the past ten years. The condition of winter wheat on June 1 was 80.7, as compared with 83.5 on

May 1; 86 on June 1, 1908; 77.4 in 1907; and 80.5 the June 1 average of the past ten years.

The condition of rye on June 1 was 89.6, against 88.1 on May 1; 91.3 on June 1, 1908; 88.1 in 1907; and 89.4 the June 1 average of the past ten years.

The area sown to oats was about 32,422,000 acres, or 78,000 acres (.2 per cent) more than the area sown last year. The condition of the crop June 1 was 88.7, as compared with 92.9 on June 1, 1908; 81.6 in 1907; and 88.4 the June 1 average of the past ten years.

The area sown to barley was about 6,881,000 acres, or 235,000 acres (3.5 per cent) more than the area sown last year. The condition of the crop on June 1 was 90.6, as compared with 89.7 on June 1, 1908; 84.9 in 1907; and 90.6 the June 1 average of the past ten years.

The condition of meadows (hay) on June 1 was 87.6, against 84.5 on May 1, and 96.8 on June 1, 1908.

The condition of pastures on June 1 was 89.3, against 80.1 on May 1, 97.7 on June 1, 1908, and 91.1 the June 1 average of the past ten years.

In Massachusetts the acreage of oats compared with last year was given as 100 and the condition as 97; the condition of rye as 98; the condition of hay as 96; the acreage of clover as compared with last year as 100 and its condition as 95; the condition of pasture as 97; the condition of apples as 84; the condition of peaches as 83; the condition of pears as 90; the condition of blackberries as 92; the condition of raspberries as 84; the condition of cantaloupes as 85; the condition of Lima beans as 96; the production of asparagus as compared with a full crop as 85; the condition of cabbages as 90, and the condition of onions as 93.

TEMPERATURE AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM NATIONAL WEEKLY WEATHER BULLETIN.]

Week ending June 7. — Moderate weather as to temperature prevailed during the entire week over all districts east of the Rocky Mountains. In the Plateau and Pacific coast districts, however, decidedly warmer weather prevailed, especially over the southern portions. The mean temperature

for the week was above normal in practically all portions of the United States, except a few points in northern New England, the lower Mississippi valley, points in the Rocky Mountains and along the immediate Pacific coast. Showery weather continued over most of the Great Plains and the Mississippi valley districts until after the middle of the week, and over portions of the Ohio valley, east Gulf States and Atlantic coast districts unsettled weather continued till the latter part of the week. Precipitation was well above normal from eastern Texas eastward over the cotton belt, and over the Atlantic coast and Appalachian Mountain districts as far north as Maryland. It was slightly above over most of the Lake region, portions of New York, New England, and locally in portions of the middle Mississippi and lower Missouri valleys.

Week ending June 14. — Cool weather continued generally, as in the previous week, over the middle Mississippi and upper Ohio valleys and Middle Atlantic States, and the week as a whole continued cool also over the middle and southern Plateau and Pacific coast districts. It continued warm over the Gulf States, and was decidedly warmer than previously from the upper Lakes westward to the Missouri River valley and northern Rocky Mountain districts. In the middle Mississippi and Ohio valleys, lower Lakes and Middle Atlantic States the mean temperature was from 3° to 6° below normal. The week opened with general rains over the east Gulf and Atlantic coast districts, but was generally fair elsewhere. Only local showers occurred thereafter until the 17th, when an extensive area of cloud and rain overspread the middle and upper Mississippi valley and Lake region, moving rapidly eastward the following day and bringing on general rains in all eastern districts. Precipitation was above normal generally over the east Gulf and South Atlantic States and New England.

Week ending June 21. — Cool weather for the season prevailed during the greater part of the week over all northern districts, and it was also cool over the Rocky Mountain, Plateau and South Pacific coast States. From the Great Lakes westward over the upper Mississippi and Missouri valleys

and northern Rocky Mountain region the average temperature for the week ranged from 6° to 10° per day below the normal. The week was warm over the southern half of the country and from central Oklahoma eastward to the lower Ohio valley. Minimum temperatures near the freezing point occurred in northern New England. Frequent light to heavy rains occurred during the first three days over large portions of the interior districts. Seasonable amounts of precipitation occurred in all districts east of the Rocky Mountains, except along the northern border from North Dakota eastward over the upper Lakes, portions of northern New York and northern New England, and over portions of the immediate Gulf coast. Over these districts the amounts recorded were light. From the Rocky Mountains westward to the Pacific there was a general absence of precipitation.

Week ending June 28. — High atmospheric pressure over the Gulf and South Atlantic States and generally low pressure along the Canadian border were conditions that favored the presence of warm southerly winds, clear skies and decidedly high temperatures. From the middle and upper Mississippi valley eastward the mean temperature for the week ranged from 3° to 10° or more above the normal, the excess increasing eastward, and attaining a maximum over New England and portions of the Middle Atlantic States, where the temperatures continued high during the entire week. With no well-defined storm area conditions were favorable to local showers. The precipitation for the week was above normal in the lower Missouri and upper Mississippi valleys, in portions of the Lake region and over the Ohio and Tennessee valleys. Precipitation was below normal over most of the Atlantic coast districts from Maine to Florida, along the northern border and generally from western portions of the Plains States westward to the Pacific coast.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending June 7. — New England. Boston: The week was generally pleasant, with higher, seasonable temperature, the maximum, occurring during the middle of the week, being

near 80°, although the nights have been cool. The rainfall was small in Maine and Connecticut, but in the remainder of the section from 1 to 2 inches fell during the last days of the week. An average amount of sunshine was received.

Week ending June 14. — New England. Boston: Showers were general at the close of the week, but otherwise fair weather prevailed. The rainfall was light in Maine, New Hampshire and Vermont, and normal or slightly above in Massachusetts, Rhode Island and Connecticut. The temperature generally was seasonable and the sunshine about average.

Week ending June 21. — New England. Boston: Light showers occurred the first of the week and generally heavy rain the last, making the amount for the week above normal, except in southeastern Massachusetts and Rhode Island, where the rainfall was deficient. The nights were cool, but the day temperatures were generally somewhat above the normal. There was an average amount of sunshine.

Week ending June 28. — New England. Boston: The temperature has been high, with maximum readings near or above 90° the greater part of the week. No rain has fallen, except light showers in a few localities. Rain is needed.

THE WEATHER OF JUNE.

During the first ten days of the month there was much cloudy weather, with cool, easterly winds. The temperature during this time was considerably below the normal for the season, except during the first three days, when it was somewhat above the normal, particularly on the 3d, when it rose to above 80° generally. A general rain occurred on the 5th and 6th, which in the eastern portion of the State was quite heavy, more than 2½ inches falling in some localities. Considerable cloudy weather, with frequent rain, continued from the 10th until the 14th, with less easterly and more southerly winds. The temperature rose decidedly from the 12th to the 14th, with day temperatures generally above 80° on these three days. From the 15th to the 19th, with the exception of moderate general rains on the 18th, with amounts from .50 to 1 inch, fair and generally clear weather prevailed, with

moderate and seasonable temperatures. The night temperatures during the month, until the 20th, were generally cool. After the 20th, and for the greater part of the remainder of the month, much warmer weather prevailed, with day temperatures near or somewhat above 90°. The weather after the 20th was fair, with much sunshine, except some instances of scattered local showers. For the month as a whole the temperature was near the normal during the first half and much above the normal during the last half. The greater portion of the rainfall occurred during the first half of the month, and for the entire month was above the normal for a large portion of the State.

In the circular to correspondents, returnable June 22, the following questions were asked:—

1. What insects are proving injurious in your locality?
2. How is Indian corn looking, and what is the acreage as compared with previous years?
3. Has haying begun, and what is the prospect for the crop?
4. How does the acreage of early potatoes compare with previous years, and what is the promise for the crop?
5. How do early market-garden crops compare in yield and price with former years, and what is the prospect for those not yet harvested?
6. How do the quantity and price of dairy products and the supply and price of dairy cows compare with former years?
7. What is the condition of pasturage in your locality?
8. What is the outlook for such fruits and berries as are grown for market, naming them?

Returns were received from 137 correspondents, and from these the following summary has been compiled:—

INSECTS.

Insects are rather more plentiful than the returns for the May report would have led one to expect. All the ordinary insects are present in the usual numbers. Potato bugs are most commonly reported, but not in particularly great num-

bers. Cut worms are more than usually prevalent, as are also currant worms, wire worms and onion and cabbage maggots. More reports than ever have been received of damage from the brown-tail and gypsy moth caterpillars and from the elm-leaf beetle, due, perhaps, to some extent to the increased knowledge in regard to these insects among correspondents. Plant lice are more than usually prevalent, in some cases in such numbers as to threaten the fruit crop for the locality. Other insects mentioned are tent caterpillars, squash bugs, spittle insects, flea beetles, rose bugs, codling moths, asparagus beetles, cranberry vine worms and canker worms.

INDIAN CORN.

The acreage of Indian corn is reported as considerably increased over last year, when the largest acreage for some years was reported, showing an increased interest in this important grain and forage crop. Of the 119 correspondents answering this portion of the question 86 report an increased acreage, 30 that it is the same as formerly and only 2 that there is a decrease. The crop was planted rather late, and at time of making returns was generally backward, and in some cases yellow, owing to the cool damp weather which prevailed. There was generally a good stand, and the recent hot weather should do much to bring the crop up to the normal in condition. Much depends on the weather of the next two months in regard to this crop.

THE HAY CROP.

Old mowings generally suffered severely from the drought of last year and have not entirely recovered. The seasonable rains of May and June have done much for the crop, and at least a normal crop seems to be in prospect. It is rather backward, haying having commenced in only a few localities, and then only with the earlier grasses, so that estimates at this time may be subject to serious revision. Of the 134 correspondents answering this question 100 report that the prospect is for a good, average or above average crop, while 34 report that it is fair or poor. New seeded and well-cared-for fields generally promise very heavy yields.

POTATOES.

There is not a large acreage in the State devoted to early varieties of potatoes, and this acreage does not show any substantial increase this year. Returns indicate a slight increase for the State as a whole of the acreage of potatoes, including both early and late varieties. The crop was generally backward at the time of making returns, but germinated well, and the vines were almost invariably reported as looking well and promising a good yield if unlooked-for checks do not develop later on.

EARLY MARKET-GARDEN CROPS.

Early market-garden crops were held in check by the cool weather and lack of sunshine, and in many instances were not marketed at the time of making returns. Asparagus was reported as a short crop in many sections. Otherwise these crops seem to have yielded well, and prices average rather higher than a year ago. Later market-garden crops were reported as promising.

DAIRY PRODUCTS AND DAIRY COWS.

The flow of milk has been well maintained thus far this season and dairy products of all kinds are consequently in full supply. The price of milk remains the same in most sections as a year ago, whatever change there has been appearing to be in the direction of higher prices. Butter and butter fat are reported as bringing slightly increased prices over last year. As for several years past there seems to be a shortage in the supply of dairy cows, and high prices prevail. An excellent opportunity seems to be offered to farmers in certain sections in breeding good milking stock to meet this demand.

PASTURAGE.

Feed in pastures was short in the early season, owing to the severe drought of last year, and was late in starting, but now appears to have largely recovered, and to be in rather better than average condition. There are some complaints

that while it is making good growth it lacks sweetness and proper feeding quality, but these are not numerous. One hundred and fifteen correspondents report it to be in good or excellent condition and 26 poor or below average.

FRUITS AND BERRIES.

The strawberry crop was rather later than usual and at time of making returns was just coming on in most sections. An abundant crop was expected, and so far as reported good prices were being received. Blackberries, raspberries, currants and gooseberries bloomed full and promise excellent crops at this time. Wild berries generally bloomed full. Apples set well in some sections, but for the State as a whole promise rather less than an average crop, especially for winter varieties. Pears also appear to be light, and plums are not more than average. Cherries were generally a good crop, though little grown except for home use. There were very few reports on peaches and no estimate can be formed at this time. The "drop" on apples does not appear to have yet assumed serious proportions. Cranberries were rather backward and not in bloom in general at time of making returns, but so far as could be judged promised well, the vines being generally in good condition.

NOTES OF CORRESPONDENTS.

(Returned to us June 22.)

BERKSHIRE COUNTY.

New Marlborough (E. W. RHOADES). — Wire worms are eating corn and there is some complaint of ants eating potatoes when first planted. Much corn was planted and it looks fairly well, but is rather late. An uneven grass crop is reported by most farmers and it is not ready to cut yet. Potatoes will be late; many planted and they promise fairly well. The quantity of dairy products seems to be a little under the normal; good cows scarce and high. Pastures look fresh and good. Peaches are setting very full; raspberries, blackberries and currants promise well. Many are planning to raise colts and many calves are being raised.

Tyringham (EDWARD H. SLATER). — Potato bugs are doing some damage. Indian corn is looking well, but is quite backward; acreage larger than in previous years. No haying has been done, but there is prospect for a good crop. There is about the usual acreage of potatoes and they are looking well. Very few market-garden crops are raised in this vicinity. The price of dairy products is about the same as last year. There is a good outlook for all kinds of berries.

West Stockbridge (J. S. MOORE). — Potato bugs and currant worms are doing some damage. On account of continued cold weather Indian corn is very backward; acreage about as usual. Haying has not commenced, but the prospect is for the best crop in years. There is about the usual acreage of early potatoes and they are now looking well. Early market-garden crops are about as usual, though backward. Possibly butter may be higher than in former years; good dairy cows are high. Pastures are in better condition than usual. There will be a good crop of apples and pears; very few berries raised for market; wild berries promise well.

Becket (WM. H. SNOW). — Potato bugs and tent caterpillars are doing some damage. Corn looks yellow and small on account of cold weather; acreage fully up to last year. Haying has not begun, but there is prospect of a good crop. There is about the usual acreage of early potatoes, but they are backward. Market-garden crops are little grown. There is about the usual supply of dairy products and dairy cows, with prices about as usual. Pasturage is in very good condition.

It is hard to tell what the prospect is for fruit as everything was very late in blooming, but there will probably be about average crops.

Hinsdale (THOS. F. BARKER). — Potato bugs are doing some damage. Corn is very backward and did not come up well, acreage about as usual. There is about the usual acreage of early potatoes. Market-garden crops appear to be about normal. Dairy products and dairy cows are about average in supply and price. Pasturage is in good condition there having been plenty of rain. Fruits and berries of all kinds bloomed well. Crops all seem late, but are in fair condition.

Dalton (WESLEY B. BARTON). — Potato bugs are doing some damage. There is a full acreage of Indian corn and it is looking well. Haying is not begun, but the prospect for the crop is good. There is a full acreage of potatoes and they are looking well. Market-garden crops are backward at present. There is a full average quantity of dairy products, with prices higher than usual. Pasturage is in good condition. Apples set well and strawberries look good. The season has been cloudy and rather cool, but without a great amount of rainfall.

Windsor (HARRY A. FORD). — Some potato bugs have appeared. Corn planting was late and the crop is not all up yet; acreage increased. The prospect for the hay crop is good, but it is late and none has been cut as yet. Potatoes are backward, but promise well. Market-garden crops are not raised here. The quantity and price of dairy products and the supply and price of dairy cows are all greater than ever. Pasturage was never in better condition. Strawberries are two weeks late.

Savoy (WILLIS W. BURNETT). — There has been very little damage from insects. Indian corn looks fairly well, but is very backward; acreage less than usual. Haying has not begun and grass is looking well though backward. There is a larger acreage of early potatoes than usual and they are looking fairly well. Little is done here in market-gardening. Quantity and price of dairy products and supply and price of dairy cows are fully up to former years. Pastures are in fully average condition. Little is done here with fruits and berries.

Williamstown (S. A. HICKOX). — No insects are doing any damage to speak of. Corn shows a good stand, but is ten days late. Haying has not begun and grass is late, with a good crop promised. The acreage of early potatoes is normal and they promise well. Early market-garden products are below average in yield. Dairy products are firm in price, quantity normal; dairy cows range in price from \$30 to \$60. Pastures are in good condition. Apples, cherries and berries promise well.

FRANKLIN COUNTY.

Charlemont (J. M. J. LEGATE). — Potato bugs are doing some damage and cut worms are working badly on some fields of corn. Indian corn is backward, owing to rain and cold weather; acreage perhaps slightly increased. Haying has not begun and the prospect is for a light crop on old seeded land, the drought last year burning it out. There are more

potatoes planted than usual, but they are late owing to cold and wet. Market-garden crops are little raised here. Our farmers are making less milk this year than usual; good cows bring good prices. Pastures are in good condition. The apple crop will be below the average, and they are about the only fruit grown for market. The season has been very cold and wet.

Leyden (FRANK R. FOSTER). — Indian corn is rather small, owing to cold, wet weather; acreage much larger than usual. Haying has not begun and the prospect now is that the crop will be light. More potatoes than usual have been planted and are looking well. Market-garden crops are not raised here to any extent. Dairy products and dairy cows are normal in yield and price. Pasturage is in good condition. Many of our farmers are spraying their orchards, something never done before to any extent.

Ashfield (ALBERT HOWES). — Very few insects have appeared. Corn is very backward, but the acreage is much increased. Haying will begin to a slight extent this week; the crop promises well although more sunshine is needed. More potatoes have been planted than usual and they are looking well. No market-garden crops are raised here. Good cows as usual bring good prices; dairy products higher in price than in former years. Pasturage seldom looks better at this time of year. There are no fruits grown for market here, but strawberry beds are looking finely.

Conway (L. T. HOPKINS). — There is some complaint of damage by wire worms. Indian corn is looking well, but is late; acreage larger than usual. Haying has not begun and grass is light on all but recently seeded fields. This is not a potato-growing section. No market-garden crops are raised here. Dairy crops are fully up to the average in quantity and price. Pasturage is in good condition.

Deerfield (DWIGHT A. HAWKES). — I know of no insects doing damage. There is a good stand of corn, and the acreage is increased over other years. Haying has not begun, but the prospect is good for a large crop. There is the usual acreage of early potatoes and they promise well. The quantity and prices of dairy products are about as usual; cows are in light supply. Strawberries and raspberries promise well.

Sunderland (GEO. P. SMITH). — No insects are very numerous as yet. There is a small increase in the acreage of corn; fields are generally well stocked, but plants very small and late. Haying has not begun; good average crop in prospect, new seeding heavy, old fields light, clover good. Early potatoes look well, but are backward; acreage about as usual. Market-garden crops are little grown, yield light and prices good. Good cows are rather higher than usual; prices of milk and cream too low. Strawberries, raspberries and blackberries will be full crops. Tobacco transplanting is finished and the plants have a good start. Onions as a rule are small and backward, and many fields show light colored tops.

Northfield (THOS. R. CALLENDER). — Cut worms are doing some damage in gardens. Corn is a week or ten days late; acreage at least 25 per cent above the average. Haying has not yet begun and the prospect is good for an average crop. There is about the usual acreage of early potatoes and the vines are looking well. All garden crops are late. Dairy products and dairy cows are fully up to the average of recent years in supply and price. Pasturage was never better. Most fruits and berries promise abundant yields.

Wendell (N. D. PLUMB). — No insects are doing damage at present. Indian corn is somewhat backward; acreage the largest for years. The hay crop will be above the normal. There is the usual acreage of early potatoes, but the crop is somewhat backward. No early market-garden crops are yet ready for market. All dairy products are somewhat higher than usual; good cows bring from \$35 to \$50. Pasturage is in the best condition for many years. The outlook for fruits and berries is somewhat above the normal. The season has been very backward for all crops except grass.

New Salem (DANIEL BALLARD). — Elm tree beetles and currant worms are doing some damage. The stand of Indian corn is good, but it is backward; there is a small increase in acreage. The hay crop is late and none has been cut as yet, but there is a good yield in prospect. Early potatoes look well, but are little raised. Early market-garden crops are not much raised. Yield and prices of dairy products are fully sustained as in comparison with former years. Copious rains have kept pastures in good condition. Strawberries are plenty and there is a heavy bloom on blackberries.

HAMPSHIRE COUNTY.

Enfield (D. O. CHICKERING). — Potato bugs are doing some damage. Corn is quite backward, but is growing well. Haying has not begun, but the prospect for the crop is good. There is about the usual acreage of early potatoes and they promise well. The quantity of dairy products is about the same as usual, with prices above the average; cows are scarce and high. Pasturage is in good condition. The outlook for fruits and berries is good.

Belchertown (H. C. WEST). — Potato bugs are much more numerous and injurious than usual. Corn is late, but has come up nicely; acreage 5 per cent above last year. No haying has been done as yet, but the prospect is fair for a full average crop. The acreage of early potatoes is 10 per cent above the normal and they are looking finely. Early market-garden crops promise fairly though late. Dairy products are fully average in quantity and price. Pastures are in fair condition, rather better than last season. Apples and pears promise fair crops; grapes and peaches full, also strawberries, raspberries and blackberries. Pastures in this section have gone back one-half in the past twenty years, and is becoming a serious question to the dairy interests.

Amherst (WM. P. BROOKS). — Wire worms, cabbage maggots, onion maggots and tent caterpillars are doing some damage. The acreage of Indian corn is considerably increased, but it is small, yellow and backward, owing to cool weather. Haying is just beginning, with about the usual crop, containing an unusual amount of sorrel. The acreage of early potatoes is somewhat increased and the crop looks well. Market-garden crops are backward, but promise fair yields; prices good, especially for spinach and asparagus. Conditions are average as to dairy products and dairy cows. Pasturage is in excellent condition. Peaches good; apples and pears set poorly; plums and cherries good; strawberries good, but late; currants promise unusually well; raspberries and blackberries in full and heavy bloom. Hot weather is much needed by all crops.

Hadley (H. C. RUSSELL). — Cut worms and onion maggots are damaging crops to a certain extent. Corn is not quite up to the average, owing to cold weather and lack of rain. The hay crop promises well, but cutting has not yet begun. The acreage of early potatoes is normal and the crop is looking well. There is not much change in the amount of dairy products and prices do not change much. Market-garden crops are doing well. Pastures are in fair condition. Berries of all kinds and currants promise well; also apples and peaches.

Hatfield (THADDEUS GRAVES). — Potato bugs and wire worms are doing some damage. Indian corn was planted early and is looking well; acreage slightly increased. Haying has not begun, but the prospect for the crop is good. The acreage of early potatoes is about the same as usual and the crop is looking well. Early market-garden crops are not raised. Cows are only kept for family use in this section. The season has been cold and late but pastures are in good condition. Fruits and berries are not grown for market. Tobacco and onions are both doing well, but warmer weather is needed.

Westhampton (LEVI BURT). — No insects are doing noticeable damage. Early planted corn did not come up well, owing to cold and wet weather; acreage about the same as usual. Haying has begun and the crop is excellent on rich ground. Early market-garden crops are but little raised for market. Quantity of dairy products up to the average and butter fat 3 cents per pound higher; supply of cows equal to the demand. Pastures are in good condition owing to an abundance of rain. Strawberries promise well; wild blackberries are in full bloom.

Williamsburg (F. C. RICHARDS). — Potato bugs begin to be troublesome and plant lice are seriously injuring plums and cherries. Indian corn is looking well, though backward, and with good weather will make a good crop; acreage increased about 40 per cent. Some have commenced haying and there will be a heavy crop on well kept mowings. There is a slight increase in the acreage of early potatoes and they are looking well. Dairy products bring higher prices than usual; supply of good cows limited with prices higher. Pastures are looking

well at present. Apples and peaches promise good crops; pears about one-third of a normal crop; strawberries good.

Chesterfield (HORATIO BISBEE). — There are really no insects doing damage. Indian corn is small and backward; fully 25 per cent more planted this year than usual. Haying has not begun and the prospect for the crop is very good. Early potatoes are looking fairly well; not many more planted than common. Market-garden crops are not raised. The quantity of dairy products is a little short but prices are well up. Pastures are in good condition. No berries are raised for market, but wild berries promise well.

Middlefield (J. T. BRYAN). — There is very little damage from insects. Indian corn was planted late, but is now looking well, with a slightly increased acreage. Haying has not begun, but the prospect is good for a large crop. Very few early potatoes are raised here, but late potatoes promise well. Garden crops are growing well. The price of dairy products keeps up well, and milch cows are in excellent demand. Pasturage was never better. The outlook is good for an abundant crop of fruits and berries.

HAMPDEN COUNTY.

Chester (C. Z. INZELL). — Indian corn is in very good condition and more has been planted than last year. Haying has not begun as yet, but the crop promises to give a good yield. The quantity and price of dairy products and the supply and price of dairy cows are about normal. Pasturage is in good condition.

Russell (E. D. PARKS). — Potato bugs and elm-leaf beetles are very numerous. Indian corn is not very forward, but is of good color; acreage about as usual. Haying is not yet begun; a fair crop is expected, but not above normal. Potatoes are backward, with a full acreage planted. But little is done here with market-garden crops. Prices for dairy products are high and good cows bring good prices. Pasturage is in very good condition. Strawberries are a very good crop.

Southwick (L. A. FOWLER). — Cut worms, wire worms and potato bugs are doing some damage. The cool weather has made corn rather backward. Haying has not begun, but the prospect is for a good crop. There is an increase in the acreage of early potatoes and the vines now look well. There is no marked difference in the quantity and price of dairy products; good cows are scarce and high. Pastures are in good condition. Strawberries are yielding well and blackberries bloomed full.

West Springfield (N. T. SMITH). — Cut worms, cabbage and onion maggots are in evidence to some extent. Corn is small, but a good stand generally and ready for rapid growth with the coming of corn weather. There has been no grass cut yet, but the prospect is good. The acreage of early potatoes is about the same as usual, and they are

growing finely. Early market-garden crops are good, with fair prospects for later ones. There is little variation in dairy cows and products from former years. Pasturage is in good average condition. The strawberry crop is just being harvested, with promise of a full yield; raspberries and blackberries are in full bloom with promise of good crops.

Chicopee (E. L. SHAW). — Some currant worms have appeared; other insects are not doing much damage. Corn comes rather slowly on account of cold weather, and is inclined to be yellow; acreage a little larger than usual. But little hay has been cut and the prospect for the crop is good. Very few early potatoes are raised. Asparagus has not yielded as well as usual, but prices have been firm. There seems to be no excess of milk at this time as there usually is, price unchanged; cows are high. Pastures are looking fairly well. Apples, pears, peaches, grapes, strawberries, raspberries, blackberries and currants all promise good crops.

East Longmeadow (JOHN L. DAVIS). — Cut worms and potato bugs are doing some damage. Indian corn is in very good condition, with a large acreage. The prospect for the hay crop is good, though there has been but little cut as yet. There is an average acreage of early potatoes and the crop is promising. All market-garden crops look finely and prices are fully maintained. Milk is a little short, price same as last year, $3\frac{1}{2}$ cents per quart at the door; good cows are scarce and high. Pastures are in very good condition. Pears, peaches and plums look well; strawberries did not set very well in some cases. Our local grist mill man reports about double the custom in grinding last year over five or six years ago.

Hampden (JOHN N. ISHAM). — Potato bugs are plentiful, also currant worms. There is a good stand of corn, with an increase of 5 per cent in acreage over last year. Haying has not begun, but there is prospect of a full average crop. There is about the usual acreage of early potatoes, but many missing hills, otherwise looking well. Comparatively little is done with market-garden crops. There is no increase in the quantity of dairy products, prices equal to or better than formerly; good dairy cows are scarce and high. Pastures are in good condition. The outlook for strawberries, raspberries and blackberries is very promising.

Wilbraham (HENRY M. BLISS). — Elm-leaf beetles are doing some damage. Indian corn is backward, with the acreage 10 per cent greater than usual. Very little haying has been done, but a fair average crop is promised. Early potatoes are backward, owing to cold weather. Market-garden crops are backward for the same reason. Dairy products and dairy cows are fully normal in quantity and price. Pasturage is in good condition. The outlook for all kinds of fruits and berries is good. Old hay is scarce at \$20 per ton.

Palmer (O. P. ALLEN). — Very few insects have appeared as yet. Corn is very backward, owing to cold, wet weather; acreage about

normal. Haying has not begun, but the crop promises well. There is about the usual acreage of early potatoes and they promise well. Prices of dairy products fully up to former years; price of cows about as usual. Pastures are in very good condition indeed. The outlook for fruits and berries is very promising.

WORCESTER COUNTY.

West Brookfield (MYRON A. RICHARDSON). — The canker worm is doing more damage to apple trees than in former years. Indian corn has come up in fine shape and is looking well, though late on account of cold and wet weather. Haying has not begun, but there promises to be more than an average crop. The acreage of early potatoes is normal. Market-garden crops are not raised here. Dairy products bring good prices and are normal in quantity; good cows are scarce and higher in price than for years. Pasturage is mostly good in quantity, but lacks sweetness on account of cloudy weather. Currants and strawberries are yielding well.

New Braintree (CHARLES D. SAGE). — Spittle insects, tent caterpillars and elm-leaf beetles are doing some damage. Indian corn is very backward, but shows a good stand; acreage 50 per cent larger than usual. Very little haying has been done, grass promising but a little late. The acreage of early potatoes is 50 per cent more than usual, and they are looking well, but many were planted late. Market-garden crops are little grown. There seems to be a shortage of dairy cows, with prices well sustained. Pasturage is in excellent condition and stock of all kinds is doing well. Fruit is little grown, except apples, but all kinds promise abundant yields. Farmers were generally cut down on their ratings this spring and are making more milk than they can sell at a living price. Milk is selling lower at the present time than anything else on the market.

Barre (JOHN L. SMITH). — No insects are doing any special damage. Corn is small, but there is a larger acreage than for several years. Haying has not begun; grass is thin, but growing fast. Early potatoes are little raised. Market-garden crops are not raised here to any extent. Prices are about the same as usual for dairy products and dairy cows. Pasturage is in poor condition. Apples show a good average setting of fruit. Owing to the dry weather last year, grass, both in mowings and pastures, looked poorly, but it is now beginning to thicken up somewhat. A large acreage of both late potatoes and ensilage corn has been planted.

Petersham (B. W. SPOONER). — Potato bugs and a few tent caterpillars are doing damage. There is a good stand of Indian corn and it is growing well; more planted than usual. No grass has been cut as yet, but the prospect is good for a large crop. There is about the usual acreage of early potatoes and the vines are looking finely. The wet weather has kept gardens very fresh. There is about the usual

quantity and price for dairy products, most of our cream going to Boston. Pastures were never better at this date. All fruits and berries blossomed full.

Templeton (LUCIEN GOVE). — Potato bugs, cut worms, elm-leaf beetles, squash bugs and currant worms are all prevalent. Corn is very backward, nearly two weeks late; acreage slightly increased. Haying has not begun, but the prospect is for a better crop than last year. There is no material change in the acreage of early potatoes and it is too early to predict as to yield. Market-garden crops are late and those harvested have given less than normal yields, no material changes in price. Quantity of dairy products average, no change in price; supply of cows equal to demand. Pastures are in good condition. Strawberries are fair; raspberries rather poor; blueberries and blackberries good; currants fair. White frost showed on low ground on the morning of June 19.

Ashburnham (E. D. GIBSON). — No insects are doing any special damage. Corn is backward, but has made a fair start; acreage much increased. Haying has not begun and the crop will not be a normal one; new seeded fields good. There is an average acreage of early potatoes. No market-garden crops have been harvested as yet. Prices of dairy products higher than usual; dairy cows very scarce. Pasturage is in only fair condition. Small fruits are not grown for market; prospect good for a large blueberry crop.

Fitchburg (DR. JABEZ FISHER). — Some cut worms are doing damage, few other insects. Indian corn is looking well. Haying has not begun, the season being a little late, but a good yield is promised. The acreage of early potatoes is somewhat larger than usual and they are looking well. Pastures are in good condition. The set of tree fruits is hardly as large as the amount of bloom indicated and the promise is only moderate; berry fruits wintered well and are fairly promising or better.

Princeton (A. O. TYLER). — Tent caterpillars, cut worms and potato bugs are doing damage. Corn is looking well, but is late; acreage about the same as in previous years. Haying has not begun and there is prospect of a good crop. There is the usual acreage of early potatoes and they are looking finely at present. Market-garden crops are not grown. The quantity and price of dairy products and supply and price of dairy cows is about the same as in former years. Pasturage is in good condition. Apples promise fairly, also peaches; plums heavy; pears light; strawberries yielding well; prospect good for other berries.

Harvard (JOHN S. PRESTON). — Indian corn is very backward; acreage about the same as usual. Haying has not begun, and the general belief is that the crop will be light. Acreage of early potatoes about normal and they are looking very well. Asparagus has not yielded well, owing to cold weather. Milk farming is our principal

work here and the price received is not quite as good as in some years. Pastures are looking pretty well, but the feed is not as good as some years. Strawberries are just coming on and are a good crop; other fruits and berries promise very well.

Northborough (JOHN K. MILLS). — Potato bugs, cut worms and onion maggots are doing damage. Indian corn is a little late, but nicely except on cold and wet land. Very little haying has been done as yet and the crop will be an average one. There is a larger acreage than usual of early potatoes with promise of a good crop if properly cared for. Asparagus has been a light crop; other market-garden crops generally growing nicely. The price of milk is the same as last summer, butter somewhat higher; cows about as usual. Pastures are not as good as usual, owing to the drought of last summer. There will be a good crop of strawberries and other fruits and berries are coming along nicely.

Shrewsbury (F. J. REED). — Cut worms, potato bugs, onion maggots and striped squash bugs are doing some damage. Indian corn is just out of the ground; acreage much larger than usual. Haying has not yet begun, but a fair crop is in prospect. The acreage of early potatoes is about the same as usual and they look fairly well. Early market-garden crops are about normal and the prospect for later ones is good. Dairy products are about the same as usual in quantity and price; supply of dairy cows short and prices high. Pastures are in very good condition. Berries are very late, but the outlook for them is good.

Worcester (H. R. KINNEY). — There are some potato and squash bugs doing damage and about the usual trouble from cut worms. Corn is late and yellow, but a good stand; more planted for grain than usual. The prospect is for better than an average crop of hay, but cutting has not begun. There is about the usual acreage of early potatoes, but they are not as far advanced as usual. Early market-garden crops gave fair yields with rather better prices than last year. Pasturage is better than the average. Small fruits are looking well, but tree fruits, with the exception of plums and peaches, are very uneven. The season has been cold and all crops are backward.

Leicester (H. H. KINGSBURY). — Potato bugs, plant lice, rose bugs and black flea beetles are doing damage. Corn planting was delayed until the first week of June, hence the crop is backward but of good color and doing well. Haying has not commenced and the prospect is good for an average crop. No early potatoes are planted, but the acreage of late potatoes is increased. No market-garden crops are raised here. With a few exceptions all dairy products are disposed of as whole milk and the quantity is up to the average. Pasturage is in excellent condition, owing to cold weather. There are no fruits or berries raised especially for market hereabouts.

MIDDLESEX COUNTY.

Marlborough (E. D. HOWE). — Brown-tail and gypsy moths, tent caterpillars and potato beetles are doing damage. Indian corn is from two to three weeks late, with a slightly increased acreage. Rye grass, orchard grass and June grass is being cut, and the prospect is good for the hay crop. There is the usual acreage of early potatoes and they are looking well. Early market-garden crops are not much grown. Milk is not overabundant, but prices are well maintained; cows scarce and high. Pastures are in normal condition. Strawberries are a good crop; currants fair; peaches and apples promise three-fourths crops.

Maynard (L. H. MAYNARD). — Gypsy and brown-tail moths, cut worms, potato bugs and asparagus beetles are doing damage. Indian corn looks well, but is late; acreage more than in former years. Haying has not begun, but the crop promises to be an average one; old seeded fields suffer greatly from last year's drought. The acreage of potatoes is about average, but the crop is doubtful at this writing. Market-garden crops have been good and promise well, but are backward. Dairy products bring a little better prices than former years; good cows are high. Pasturage is in good condition. Strawberries will be plenty and are of exceptionally good quality; small fruits about average; all wild fruit will be plenty.

Littleton (GEO. W. SANDERSON). — Brown-tail moths and elm-leaf beetles are active. Corn is looking well, with a much larger acreage than usual. Haying has not begun to any extent, but the prospect is good for a larger crop than last year. The acreage of early potatoes is normal and they are looking well. Market-garden crops are little grown, but promise well. Quantity and price of dairy products about as in former years; there is a better demand than usual for dairy cows, causing increased prices. Pasturage is in very good condition. Strawberries, blackberries and raspberries promise normal crops. The raising of hay and other forage crops is the chief business of our farmers.

Townsend (G. A. WILDER). — Brown-tail moth caterpillars and plant lice are doing damage. Indian corn is in good condition, with about the usual acreage. Haying has not begun, but the prospect is that there will be a good crop. There is about the usual acreage of early potatoes and they are looking well. Early market-garden crops are about normal in yield and price. The quantity and price of dairy products and the supply and price of dairy cows is about the same as usual. Pasturage is in good condition. The outlook for fruits and berries is excellent; apples and peaches are our principal fruits.

Dunstable (A. J. GILSON). — Potato beetles are very numerous and more tent caterpillars have been seen than for years, while brown-tail moth caterpillars are doing much damage to trees that were not cleared of their nests in the fall. Corn is looking well, with a larger acreage planted than usual. Haying has not begun and there is only

a light crop in prospect. There are but few early potatoes planted in this locality and it is too early to predict as to the crop. No market-garden crops are raised to speak of. The quantity and price of dairy products remain about the same as in former years; dairy cows are scarce and high. The outlook for winter apples is poor, while that for small fruits is better; very little fruit except apples is grown for market.

Tewksbury (G. E. CROSBY). — Cut worms, brown-tail moth caterpillars and tent caterpillars are doing damage. Indian corn is not much grown; acreage about as usual. But little grass has been cut, but the crop will be from 25 to 50 per cent larger on old land than last year. More early potatoes have been planted than last year and they are looking finely. The yield of early market-garden crops has been good and prices fair. Cows are still high, with milk about as last year. Pastures are in good condition. Strawberries generally will yield well, while most other fruits will be light.

Billerica (E. F. DICKINSON). — There are no special ravages from insect pests. Indian corn is looking well but late, with a larger acreage than usual. Haying has not begun; an average crop is promised, some fields being damaged by last year's drought. There is the usual acreage of early potatoes and they promise well. All market-garden crops are late, but promising, with fair prices. Cows are very high, with milk prices unchanged. Pasturage is in good condition. Strawberries promise an extra yield.

Concord (WM. H. HUNT). — Cut worms and potato beetles are prevalent. Corn is backward on account of the cold weather, acreage average. Haying has begun on a small scale and there is a good crop. There is an average acreage of early potatoes and the promise of a fair crop. Asparagus has been short on account of cold weather, but prices have been good. Dairy products are a little higher than some years ago. Pastures are in very good condition. Strawberries look very well and promise a large crop; apples fair in some varieties, while others do not promise well; pears medium; grapes have blossomed well.

Reading (R. L. PERRY). — Brown-tail and gypsy moth caterpillars are stripping some sections. Corn is looking well, with about the same acreage as in previous years. Haying has begun and there is promise of a large crop. There are about the same number of early potatoes in and the promise of a good crop. Garden crops are backward, but the yield and price have been good. Good dairy cows are high and this tends to keep the price of dairy products up. Pastures are in fairly good condition. Strawberries are going to be plentiful and of good quality; raspberries and blackberries have blossomed well and promise well.

Winchester (S. S. SYMMES). — Cut worms are doing much damage. Indian corn is not raised here. Haying has begun and there will be a fine crop. Potatoes are not raised in any quantity, less than ever

before. Market-garden crops are good and are selling better than last year. Pastures are in very good condition. Strawberries are later than usual and the crop is light.

Newton (G. L. MARCY). — Gypsy moth caterpillars and elm-leaf beetles are doing damage. Indian corn is not much grown, but sweet corn is looking well. Haying has not begun and there is prospect of a good crop. There is about the usual acreage of early potatoes, but they are not much grown. The prospect for market-garden crops is good. Dairy products tend to bring higher prices than formerly, but the quantity produced is smaller. Pasturage is in good condition. The outlook for fruits and berries is good.

ESSEX COUNTY.

Salisbury (WESLEY PETTENGILL). — Canker worms, brown-tail moth caterpillars and striped squash bugs are doing some damage. Corn is looking well at the present time; acreage double that of previous years. Haying has not begun and the prospect is for a light crop. There is the usual acreage of early potatoes and they are looking well, but now need rain. Dairy products are about average and cows bring good prices. Pastures are in fairly good condition, but the high ground needs rain. The prospect for apples and pears is light, also plums; peaches good.

North Andover (PETER HOLT). — Brown-tail and gypsy moth caterpillars and tent caterpillars are doing some damage. Indian corn is very small for this time of year, with about the usual acreage. Haying has not begun, and the grass is lighter and later than usual. There is about the usual acreage of early potatoes, but they are very backward. Lettuce is the only market-garden crop marketed as yet and that is lower in price than usual. On account of the milk laws dairymen have gone out of business, what milk is raised brings the same price as usual. Pasturage is in good condition. There will be few Baldwin apples, early apples bloomed well; blackberries and raspberries badly winter-killed; strawberries a full crop, but a little late.

Andover (MILO H. GOULD). — Tent caterpillars and brown-tail moths are doing some damage. Indian corn is backward; acreage greater than usual. Haying has begun and it looks like a good crop. There is a normal acreage of early potatoes and they look well. Market-garden crops are backward but prices are good. There is plenty of milk, prices higher than formerly; supply of good cows limited and price high. Pastures are in good condition. There are very few apples; strawberries plenty.

Rowley (D. H. O'BRIEN). — Gypsy moth, brown-tail moth, caterpillars, canker worms, cut worms, onion maggots and flea beetles are doing damage. Indian corn is backward, but the acreage is increased. Haying has not begun and the prospect is for a light crop. There is the usual acreage of early potatoes and a good crop is promised. Owing

to the late season no market-garden crops are yet harvested; prospect fair for later crops. The quantity of dairy products is below average and prices the same as last year; average supply of dairy cows, with prices higher. Pasturage is quite good. Strawberries are a good crop; the outlook is for a short crop of fruit.

Hamilton (GEO. R. DODGE). — Cut worms are especially destructive this season; potato bugs, gypsy and brown-tail moths we have always with us. Corn was planted late, but is coming on rapidly; acreage of field corn very largely increased. Haying has scarcely begun and the prospect is good for an average crop. The acreage of potatoes, early and late, is about normal, and they promise well. Market-garden crops compare well with the normal in price and yield. Dairy cows and products are about average in quantity and price. Pasturage is excellent and the supply of milk is well maintained. Strawberries are just coming onto the market and promise a bountiful crop; other berries are not commercially grown.

Wenham (N. P. PERKINS). — Squash bugs, brown-tail moths, plant lice, onion maggots, potato bugs and cut worms are all doing damage. The area devoted to Indian corn is slightly increased and it is now picking up; sweet corn and corn for the silo is that principally grown here. Haying has not begun and will be a little late; the prospect is better than two weeks ago but there will not be nearly an average crop. Potatoes have come up well and are looking well, with a small increase in acreage. Not much in the way of market-garden crops harvested except spinach, which has brought low prices. Price of milk two cents a can less than last year, with rather less quantity in prospect; good cows are quite high and good beef cows are also selling better than usual. Pasturage was very poor up to June 5, but has improved since then; our pastures are running out badly. The outlook is good for strawberries; fair for gooseberries and currants; few peaches, and prospect for apples and pears very poor. Taken as a whole the acreage devoted to vegetables is rather increased.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES). — No insects are doing damage. Indian corn is not raised. Haying has begun with the prospect of a large crop. There is a normal acreage of early potatoes and the crop promises well. Early market-garden crops are about normal in yield and price and the prospect is good for later ones. Dairy products are above normal in quantity and price. Pasturage is in good condition. The outlook is good for strawberries, raspberries and currants.

Canton (E. V. KINSLEY). — Canker worms, cabbage worms, cut worms and potato beetles are doing damage. Indian corn is looking well; acreage larger than normal; much fodder corn yet to be planted. June grass is being cut and the hay crop as a whole promises above normal. There have been an unusually large number of small fields of

potatoes planted, large growers about as usual; promise good. Yield of early market-garden crops good, prices average and outlook good. Milk has been in full supply for a month, but is now beginning to shorten a little; good dairy cows are high. Pasturage is in very good condition. Strawberries, blackberries and raspberries are loaded, also apples and pears. Spraying for the apple crop is becoming more common.

Walpole (EDWARD L. SHEPARD). — Tent caterpillars, gypsy moth caterpillars and potato bugs are doing damage. Corn is looking well but is backward, with about the usual acreage. There is the prospect of a fairly good hay crop, very little cut as yet. There is the usual acreage of early potatoes and they are looking fairly well. Prices for dairy products same as last season; cows scarce and prices high. Pastures are about as usual, and are pretty well run out and grown up to bushes. The outlook for strawberries and blackberries is very promising.

Millis (E. F. RICHARDSON). — Potato beetles and black flies are doing damage. Indian corn is late and backward, with about the usual acreage. Haying has not begun and the crop is promising. There is the usual acreage of early potatoes and they are looking well, though backward. Market-garden crops have not yet been harvested, but good yields are promised. Dairy products and dairy cows are higher in price than formerly. Pastures are in very fair condition. A good crop of small fruits is promised.

Franklin (C. M. ALLEN). — Elm-leaf beetles and potato bugs are doing damage. Corn is backward but looks well; acreage more than usual. Haying has not begun and the prospect for the crop is very good. More early potatoes than usual have been planted and they are looking well. Market-garden crops are a little late; prices normal. Cows are high; prices for dairy products are about as usual. Pasturage is in good condition. Strawberries are a big yield and all kinds of berries promise well.

Bellingham (JOHN J. O'SULLIVAN). — Cut worms and tent caterpillars are doing damage. Indian corn is backward; acreage greater than usual. Haying is just commencing and the prospect for the crop is good. There will be the usual acreage of early potatoes and they promise well. Early market-garden crops have been average in yield and price and later ones promise well. Both dairy products and dairy cows are higher than formerly. Strawberries are a poor crop, but bring good prices.

BRISTOL COUNTY.

Attleborough (ISAAC ALGER). — No insects are doing damage as yet. Indian corn is looking well with a 25 per cent increase in acreage. Haying has not begun and an abundant crop is promised. There is the usual acreage of early potatoes and they promise well. Early market-garden crops are about average in yield and price; later one promises well. Dairy products are about the same as in former years in yield

and price. Pasturage is in good condition. Strawberries are a fine crop.

Seekonk (JOHN W. PECK). — Striped flies on melons and cucumbers are doing damage and maggots are working on the cabbages. Corn is growing very slowly, but looks fairly well; acreage larger than usual. No hay has been cut as yet and the prospect is good for an abundant crop. The acreage of early potatoes is above the average and they promise well. All crops that can stand rain and cold have been plentiful at fair prices. Quantity of dairy products fully up to the normal; cows very scarce and high. Pastures are in excellent condition at present. Apple, pear, peach and cherry trees blossomed finely; strawberries are a fine crop. All crops needing hot weather are very backward.

Dighton (HOWARD C. BRIGGS). — Elm-leaf beetles and potato bugs are doing damage. Indian corn is fully up to the average, with an increased acreage. Haying has not begun and a fair crop is expected. There is the usual acreage of early potatoes and they promise fairly well. Early market-garden crops are below average in yield, prices good so far. Good cows are scarce and high; dairy products are a trifle higher than usual. Pastures are in good condition. Strawberries promise well and prices are rather better than usual; grapes, apples, peaches, plums, pears and cherries do not seem to be in good condition. Spraying is not generally practised.

Swansea (F. G. ARNOLD). — Elm-leaf beetles and canker worms are doing some damage. The acreage of Indian corn is a little larger than usual, and the crop is looking well, though a little late. Very little hay has been cut and a fair crop is promised. There is a slight increase in the acreage of early potatoes and they are looking well. The yield and prices of early market-garden crops are about as last year; early cabbage injured by maggots. Milk is plenty and prices same as last year; good dairy cows scarce and high. Pasturage is looking finely. Strawberries are plenty; cherries, plums, pears and apples damaged by insects.

Westport (ALBERT S. SHERMAN). — Canker worms have made havoc with the apple trees, many orchards being nearly defoliated. Indian corn is late, but looking quite well; acreage more than usual. No haying has been done as yet, with a good crop in prospect. Not many early potatoes are grown, but the acreage of late potatoes is large, with promise of a good crop. Very little is done here with market-garden crops. Milk is in good demand and cows are scarce and prices high. Pastures are in good condition, having had plenty of rain. Strawberries are being picked, and are not as large as usual, owing to cool weather in June. Apple orchards bloomed full, but the prospect is poor because of the damage done by canker worms.

Acushnet (M. S. DOUGLAS). — Elm-leaf beetles, raspberry worms and potato bugs are doing damage. Indian corn is in very good condition; acreage increased one-fifth. Haying has not begun and there will be a normal crop. The acreage of early potatoes is increased 25 per cent.

and a good crop is promised where they were planted early. Asparagus was not a normal crop on account of cold; prices good. Dairy products are more than average in quantity and price. Pasturage is in good condition. Strawberries are a big crop, also raspberries.

PLYMOUTH COUNTY.

Norwell (HENRY A. TURNER). — Currant worms and squash bugs are doing some damage. More corn has been planted than usual and is looking well. Not much grass has been cut yet, and the prospect is for a good crop. There is the usual acreage of early potatoes and they are looking well. Early market-garden crops are about normal, though a little late, especially peas. There are not as many cows kept in this locality as formerly, but they are bringing good prices. Pasturage is very good indeed. The outlook is good for early apples, pears, etc.; strawberries are looking finely and promise a good yield.

Marshfield (JOHN H. BOURNE). — Cut worms, potato bugs and elm-leaf beetles are doing damage; the gypsy moths are pretty well cleaned out. Corn has a good start, with a much enlarged acreage; one man has increased from one acre to ten. Haying is just beginning, with the prospect of a little more than an average crop. The acreage of early potatoes is a little decreased, while the prospect for the crop is good. The price of early garden crops is good, but they are not as abundant as most years. Dairy products in this immediate vicinity are less in quantity than in former years, with increased price. Pastures are fully up to the average, though our pastures are not of the best at any time. Strawberries are excellent, also gooseberries; pears promise fairly well; half the apple trees are without fruit; prospect for cranberries good.

West Bridgewater (CLINTON P. HOWARD). — Elm leaf beetles, canker worms and potato beetles are doing some damage. Corn is very late and small for the time of year, with a large acreage planted. A large hay crop is expected and we are cutting old and light grass. There is a large area of early potatoes planted and they are looking very well. Market garden crops are good for the time of year. Cows are bringing high prices. Frequent rains and cool weather have kept pastures extra good. Strawberries, currants, raspberries, in fact all small fruits, promise large crops. Apple trees bear no good fruit unless sprayed.

Bridgewater (R. CASS). — Elm-leaf beetles, cut worms and potato bugs are doing damage. Indian corn is small, but of good color; acreage increased. Haying is just commencing, and the prospect is very good. The acreage of early potatoes is increased, but conditions have not been as good as usual, and some fields have been planted over. There is very little market-gardening in this section. Dairy cows and dairy products are a fair average, both as to supply and price. Pastures are in good condition. Small fruits are not grown here, with the exception of strawberries, which are good.

Kingston (GEORGE L. CHURCHILL). — Potato bugs are doing some

damage. Indian corn is looking well; acreage increased one-third. Haying has not begun, and the crop will not be as good as usual. Early market-garden crops have not been harvested as yet, but are looking fairly well. Pasturage is in very good condition. Pears, peaches, strawberries and huckleberries are looking well. The season has been very late, so it is hard to predict as to most crops.

Plympton (WINTHROP FILLEBROWN). — Tent caterpillars, gypsy moths, potato bugs and cut worms are all doing damage. Indian corn is backward, due to late planting and cold weather; acreage increased. Haying has hardly begun, and there will be a light crop. Potatoes are not largely raised, but there is promise of a good yield. The season has been very backward for garden stuff. Dairy products and the supply and prices of dairy cows are about normal. Pasturage is far better than usual. There was an excellent bloom on all fruits and berries.

Mattapoissett (E. C. STETSON). — Squash bugs, potato bugs and currant worms are doing damage. Indian corn is looking fairly well, with a rather larger acreage than usual. Haying has not begun, and the prospect for the crop is good. There is about the usual acreage of early potatoes, and the prospect is good for a good crop. Early market-garden crops are fully as good as usual in yield and price, and the prospect is good for later ones. The quantity and price of dairy products and dairy cows is about the same as usual. Pastures are in very good condition. Strawberries are good, also raspberries, gooseberries and currants.

BARNSTABLE COUNTY.

Falmouth (DANIEL R. WICKS). — The spittle insect is very plenty. Indian corn is backward, but of good color; acreage about 25 per cent above the normal. Haying has not begun, but a bumper crop is in sight. Our potatoes are all early and are looking finely, with a 15 per cent increase in acreage. No market-garden crops have been harvested, except lettuce; later ones are looking well. Dairy prices are higher this season than usual; cows about normal in price. Pasturage is in fine condition. Strawberries will not be a large crop, having blighted; blackberries and red raspberries are showing a fine bloom; currants and gooseberries half crops; plums, pears and peaches three-fourths; apples bloomed well, but the fungus on the foliage is doing much damage.

Dennis (JOSHUA CROWELL). — Tent caterpillars and cranberry vine worms are doing damage. The corn crop looks fairly well; acreage somewhat increased. Haying has begun with a medium crop in prospect. The acreage of early potatoes is about average, with the promise fair, although backward. Early market-garden crops made average yields, prices higher than usual. There is very little change as regards dairy products and dairy cows. Pasturage is in good condition. Strawberries promise a large crop, but will need rain soon. Cranberry vines are looking well, but will not blossom much before July 1.

Brewster (THOMAS D. SEARS). — Brown-tail moths, tent caterpillars, potato bugs and fire worms are doing damage. Owing to the cool weather corn is rather backward; acreage fully up to other years. Haying has begun and the prospect is good for a large crop. There is a small acreage of early potatoes compared with previous years, but a good crop is promised. There were few market-garden crops raised. The supply and price of dairy products are good and dairy cows are higher in price than formerly. Pastures are in good condition. The outlook for strawberries is very good.

Harwich (MRS. S. M. DOANE). — Cut worms have done much damage to early vegetables. Owing to the weather, corn is looking yellow, but it compares favorably in acreage with other years. Haying has begun, with prospect of a large crop. In this vicinity the acreage of potatoes is larger than ever before. Market-garden crops compare favorably with other years in yield and price and later ones promise well. Cows are bringing good prices. Pasturage is in fine condition. Vine worms have made their appearance on the cranberry bogs, but not to any extent.

Truro (JOHN B. DYER). — Cut worms, tent caterpillars and apple tree lice are doing damage. Indian corn is looking fairly well; acreage an average one. The hay crop is good, and cutting has begun. Acreage of early potatoes average, and they promise well. Prices are good for early market-garden crops, and late ones promise well. Milk is in good demand among summer people, making a local demand. Pastures are in good condition, owing to the rains. Strawberries promise well, harvesting having commenced.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Tent caterpillars, potato bugs and some sort of fly on fruit trees are doing damage. Indian corn is rather backward on account of cold weather; acreage about average. Haying has not begun, but the prospect for the crop is good. There is about an average acreage of early potatoes and they promise well. Early market-garden crops are about average in yield and price. The quantity of dairy products is average and prices higher, with cows scarce and very high. Pasturage is in good condition. The outlook for strawberries is good.

NANTUCKET COUNTY.

Nantucket (H. G. WORTH). — Potato bugs and tent caterpillars are doing damage. Corn is looking well, with an increased acreage. Haying has begun, with the prospect of a heavy crop. Potatoes are looking well, with about the usual acreage. Market-garden crops are a little late and prices are up to former years. Dairy products are about as usual in quantity, with good prices; dairy cows well up. Pastures are in good condition. Strawberries are a little late, but promise well, and a large crop of cranberries is expected.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

ECONOMY OF LABOR IN POULTRY KEEPING ON FARMS.

BY JOHN H. ROBINSON, *Editor "Farm-Poultry."*

The most important problem in poultry keeping is the labor problem. This is as true where the poultry keeper does his own work as where he hires all or a part of it. There is no advantage in getting large egg yields and growing large numbers of poultry when the margin of profit is below what might be obtained on a smaller production.

Keepers of poultry acquired several generations ago the habit of not reckoning their labor, or the labor they hired, when estimating or computing their profits on poultry. Such an error may be excused when the time given to poultry would otherwise be idle time, but even then it is better to give labor due consideration, for failure to do so has brought thousands of ambitious poultry keepers to grief. The common fundamental error in the reasoning of the person who thinks that because he has done well with a small flock he can do correspondingly well when he devotes all or a large part of his time to poultry is failure to see that the methods of managing the small flock will not, when applied to large numbers, enable the attendant to handle enough fowls to give him a living wage for the time devoted to the flock.

The labor problem, while most troublesome when poultry is kept on a large scale, demands careful attention wherever poultry is kept for profit. Even in the many cases where the poultry keeper is not dependent upon the income from poultry it should have consideration, for if it is of interest to one to make a little profit from work taken up in spare time or for recreation, it should be worth while to try to make as much profit as possible without making the work burdensome. One of the best ways to accomplish this is by saving labor, — using every possible contrivance of method or appliances to that end. Considered in a broad way, the saving of labor includes also the utilization of inexpensive labor, and of persons who would, perhaps, otherwise be unproductive. Let us discuss the question first from this point of view.

Poultry keeping was for thousands of years universally left to women, children and infirm men. It was not until the industry began to be boomed for the wonderful possibilities of profit in keeping fowls in flocks too large to be easily managed by this class of labor that able-bodied men began to regard the care of poultry as worth their while. Then the common idea was to make money by conducting operations on a large scale, or by securing large per capita returns. In either case the methods used were devised and applied with little

regard to the cost of labor. There has been a very general opinion not yet dissipated, that it was a good thing for the poultry industry and a mark of progress when it became a man's occupation, and that when men took it up they would work out more systematic methods, better adapted to the handling of poultry on a large scale. In some cases and to some extent they have done this. It has been a good thing, too, that men have learned a better appreciation of the value of poultry; but in many places it was clearly a mistake for men, especially on farms, to take on themselves the care of poultry. This many men are beginning to find out.

The work of a farm which has a properly diversified culture affords opportunities for profitable outdoor employment for every pair of hands on the farm. A proper division of the variety of tasks which make up the routine of the day, the season or the year requires that those capable of doing any of the work shall devote their time and skill to doing the things that others cannot do. It is not good management on a farm, or anywhere else, if skillful hands and strong hands are engaged in doing work not especially requiring either skill or strength, while those who could do these tasks are idle and adding nothing to the family income. It is a doubtful kindness to the feminine members of the farmer's family that relieves them wholly of outdoor duties. There has been as much masculine selfishness as consideration for the gentler sex on many farms where men have taken over the care of poultry. Even if it be granted that the head of the family and proprietor of the farm takes the care of the poultry because he likes it, that does not acquit him of the charge of selfishness, if by taking this work himself he prevents other members of the family from becoming interested in it. I have known men — altogether a good many of them — who persisted in looking after the poultry themselves, though not notably successful with it, when their wives, daughters or sons would have done it much better had they left it to them, — and let them alone. I have known a good many men who, though failures as poultry keepers, declared they would stick to it until they succeeded, — and succeeded according to their original plans, — and kept on losing money and neglecting work for which they were better fitted, when had they turned the poultry over to other members of the family to do with according to opportunities, and given their own time to work at which they could make a living, all would have been better off.

These, of course, are the extreme cases. In the average instance the wise course is for the farmer to keep his interest in poultry, exercising a measure of supervision over it or assisting with it when necessary, but in this and every other part of farm work planning to let other members of his household do such work as they are able to do and interested in doing, allowing them to get such pleasure as they may from it and giving them a fair proportion of the proceeds, whether a fair proportion means a little or all.

I was on a farm in Rhode Island a few years ago where a couple of thousand chickens were grown annually. The family consisted of the father, mother and two daughters about sixteen and eighteen years of age. The daughters were unusually attractive girls, refined and lady-like in demeanor, as self-possessed and as able to look after themselves as any girl in country or city ought to be. The family were just beginning to establish themselves on this farm. Money was none too plenty with them. The father was trying to carry on the farm work and handle the hens without hiring help. These girls, in addition to what they were doing in the house, took all the care of the chickens

until they were old enough to be colonized in fields distant from the house.

On a Massachusetts farm where several thousand chicks are grown annually, and hatched and reared with hens, the farmer's wife, a physically strong woman who cannot stand constant indoor life, takes a large part of the care and practically all responsibility of the setting hens and young chickens, while a daughter does most of the housework and takes her "outings" driving to the village, sometimes several times daily, and looking after the flowers about the house. Both women are better for this sort of occupation, and their work, of direct assistance to the men, is more than equal to the services of a good man.

On many farms where less stock is kept one or more boys, under paternal supervision, take care of quite a flock of poultry, earn something for themselves and at the same time add to the family income. One house I happen to know of has an arrangement of this kind. The boy owns and takes care of the poultry. His father furnishes everything, house, fence, feed. When the boy is at school or has other engagement his mother (usually) looks after the poultry for him. He has to supply the house a certain number of dozens of eggs per week. Anything over this the house has to buy as any other customer would. Poultry consumed in the family is not counted. On poultry and eggs sold the boy divides the receipts with his mother.

The few instances described illustrate the point of utilization of "all hands" in poultry work. Such arrangements are not always practicable, but they might be made to the advantage of all concerned very much oftener than they are.

Taking up now the other phase of the subject, let us consider some of the ways of saving labor in handling poultry on the farm that apply, no matter who does the work.

First, and on general principles, make the poultry of all kinds do as much as possible for itself. Why cut cabbage or roots in little pieces for birds which can pick it to pieces themselves? This applies, too, in the feeding of little chickens. The usual directions for feeding little chickens make the preparation of "first foods" for chicks as much work as the preparation of an elaborate dish for the table. For nearly twenty years the writer has fed little chickens from the start the same mash he gave to hens (and, when he had them, to ducks and geese), and has fed them from the start whole wheat and cracked corn. Chickens on this diet will not grow as fast at the start as those that get more concentrated foods and more variety, but losses will be light, and they will develop rugged little bodies that later will stand heavy feeding and make better and more rapid growth.

For exercise for adult fowls on the farm leaves on the floors of the houses save labor for the poultryman and utilize in the best way a waste product. Straw in Massachusetts is worth more for other purposes than it is for scratching litter. A good many poultrymen buy it and use it, but at prevailing prices it is questionable whether they can afford to do so. Almost every farmer can get leaves enough either from trees on the farm or from woods near by to provide scratching litter for his hens, and use the leaves liberally. The advantage of leaves over straw is that by frequently adding a few fresh leaves, which are immediately scattered quite evenly over the floor, grain thrown in the litter is at once concealed, and does not have to be covered with a fork or raked in. The cleanings of the house when leaves are used as litter are also in much more satisfactory shape to apply to land for fertilizing purposes.

With regard to cleanliness in poultry houses. The labor of cleaning

the houses daily or frequently is a heavy item in the course of a year and if the house is constructed right, ventilated properly, and the fowls are normal, is quite unnecessary. This doctrine, I know, seems almost repulsive to those to whom the idea of dirt of any kind accumulating seems intolerable and the practice inexcusable. But with due regard for the conditions mentioned there is really no valid objection to the time-honored practice of cleaning the poultry house only once or twice a year.

Most of the sites on which poultry houses are placed in Massachusetts are well drained. The soil is light and sandy, and makes the best kind of floor for poultry. The moisture in the droppings is absorbed or evaporates (or is absorbed and evaporates). The dry droppings mixed with the earth of the floor and with finely broken litter, and covered over with a layer of coarser litter, give off no odor, nor does the presence of such material in the floor where the hens are fed have injurious effects on grain with which it comes in contact unless grain accumulates and lies there too long, and with litter becomes damp and heats. Ordinary good judgment in feeding and ventilation is all that is necessary to avoid trouble in this connection. It should be noted that the conditions described are quite different from those that obtain where droppings accumulate without mixture with earth or litter, or without opportunity to dry as they accumulate.

If a poultry house is in a permanent location it ought to be sufficient to clean out all droppings and litter every spring, and in the fall take out the soil as deep as it is mixed with droppings and refill with fresh earth. The expense of doing this is much less than the cost of frequent cleanings. Whenever it can be done it is better to use colony houses, with or without yards, and move them every year or two. On many farms in England it is customary to use smaller colony houses than are commonly found in this country, — houses about 6 feet square, — keeping a dozen to fifteen hens in each and moving a short distance at frequent intervals. By this plan poultry run on grass benefits the grass without destroying it. It does not at present seem likely that this plan will be extensively adopted in this country. Land is cheaper and labor dearer here than there. The tendency is to larger flocks, and even when provision is made for moving houses they are rarely shifted as often as it was planned to move them. The colony house moved as often as necessary to keep the land from becoming foul seems the best plan for New England farms. One of the drawbacks to poultry keeping here in recent years is the condition of land, so much of which has had poultry on it constantly for a long term of years. It is often hard to get people to believe that the fault is in the land conditions. I have seen good poultrymen in constant trouble for several years on land they could not be convinced was injurious to their poultry, speculating, studying and trying all kinds of experiments to find out what was wrong with the birds or the feed. Then when at last they did move the poultry to another part of the farm their troubles seemed to vanish. Growing poultry constantly on the same land is like growing any other crop, with the difference that while the ordinary vegetable crop takes away from the soil, poultry are adding to the soil matter which is poisonous to them when soil over which they run is heavily charged with it, but which is of great value to vegetation. If the farmers of Massachusetts would plan to rotate poultry with vegetable crops, or keep poultry on the same ground with vegetable crops they would soon find that the poultry-carrying capacity of their land was greater than they had supposed, that many of the ills poultry on contaminated land are heir to they do not suffer when on new land,

that it is much easier to handle poultry on new land, and that every part of the land to which the poultry has access is benefited.

Many cultivated crops are better for having poultry in them at least a part of the season. After corn is about a foot high a few fowls or chickens can keep quite a plot of corn free from weeds and injurious insects. Even when the corn plot is quite heavily stocked with poultry they are not likely to do serious injury until the corn is ripening and bent ears and parted husks tempt them to help themselves. It might be debatable then whether there was any real loss in letting the birds help themselves to what corn they wanted. The answer depends on what point of view is taken. It must be remembered that the poultry have done a good deal for the corn, and that if they did not eat it other grain must be given them. Asparagus is a crop in which chickens can run from the time cutting ceases until winter. They will keep the asparagus clean and give it a liberal fertilizing. Raspberries and blackberries poultry may be kept in except when the fruit is ripening. If not too many are put in they will do no more harm in the spring than to break down a part of the growing plants. As there is usually a superabundance of these, what destruction they cause in this way is often beneficial.

On grass land where but one crop of hay is cut each year poultry may be kept on the land from the time the hay is taken off. Some of the best mowings I have seen in this State are those that are cut but once a year and poultry kept on them with the second growth so strong it really seemed a waste not to cut it. Of course too much poultry on grass land will ruin it. There is a medium where the land and poultry alike profit. An orchard furnishes an ideal place for poultry. It gives shade as well as a grass run, and the birds destroy many insects. Whether in field, orchard or garden the fowl that has an opportunity to do something for itself is saving labor for its owner, saving on the feed bill, and under proper restrictions is actually doing work which otherwise he would have to hire done. It is also keeping in good physical condition, and thus saving anxiety and extra care that go with unthrifty stock, to say nothing of the losses steadily occurring among such stock.

In the feeding of poultry on the farm many economies are possible. There is usually more or less vegetable matter that unless fed to hogs or hens goes to waste. When apples are falling from the trees the unmarketable stuff may be fed very freely to poultry. They will eat large quantities of apples, and seem to thrive better on them than on any other fruit or vegetable. Nothing else seems to go as far in saving on grain feed.

Fowls may be fed all the overripe tomatoes and cucumbers they will eat. The lettuce that runs to seed and the split heads of cabbage ought to be given them more regularly than is usually the case. Too often these things go to waste while poultry goes hungry for green food, because it is nobody's business in particular to give it to them.

Hopper feeding, of which so much is said now-a-days, is an advantage or not according to circumstances. Where fowls have opportunity to exercise and get considerable variety of other food feeding grain in hoppers in which a supply for several days or a week is put saves a great deal of labor. Under opposite conditions the apparent saving in work of giving feed may be more than offset by the work and worry brought about by hopper feeding under wrong conditions. It is not possible to make the same plan or method work equally well for all persons under all circumstances; nor is it possible for any one else to decide for a poultry keeper what is best policy for him. All points

involving a weighing of results of different courses each poultry keeper has to work out for himself. In fact, the most essential thing for the poultry keeper who would economize labor is to use his own head; to think about and study out his problems. No one else can do it for him, because no one else can see or know the situation as he sees and knows it. One of the best poultrymen in this section used to say that there was no need of a man getting up early in the morning if he would lie awake awhile every night planning how to avoid it.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF JULY, 1909.

STOCK RAISING.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, Secretary.

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
UNDER ACT OF CONGRESS OF JUNE 6, 1900.

BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1909.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

CROP REPORT FOR THE MONTH OF JULY, 1909.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., August 2, 1909.

The third number of the crop reports for the current year, that for July, is herewith presented. An article on "Live Stock in Massachusetts," by Prof. J. A. Foord, Professor of Farm Administration at the Massachusetts Agricultural College, will be found at the close of this bulletin. As is shown by the figures in this article, stock raising, particularly as relating to milch cows and the rearing of young cattle, has been declining in this Commonwealth, more or less steadily, for twenty years. To point out some of the reasons for this, and suggest methods by which this decline may possibly be checked, is the prime purpose of this article. Professor Foord is a New England man by birth, training and education, and has, therefore, a grasp of the peculiar live-stock problems of New England second to none.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics of the Department of Agriculture (Crop Reporter for July, 1909) gives the preliminary estimate of the area of corn planted as 109,006,000 acres, an increase of 7,218,000 acres, or 7.1 per cent, as compared with the final estimate of last year's acreage. The average condition of the crop on July 1 was 89.3, as compared with 82.8 on July 1, 1908, 80.2 in 1907, and 84.8, the ten-year average.

The average condition of winter wheat on July 1, or when harvested, was 82.4, as compared with 80.7 last month, 80.6 at harvest, 1908, 78.3 in 1907, and 79.6, the average at time of harvest for the past ten years. The average condition of spring wheat on July 1 was 92.7, as compared with 95.2 a month earlier, 89.4 on July 1, 1908, 87.2 in 1907,

and 87, the ten-year average on July 1. The average condition on July 1 of all wheat was 86.5, against 86.5 a month earlier, 83.9 on July 1, 1908, 81.6 in 1907, and 82.5, the ten-year average. The amount of wheat remaining in the hands of farmers July 1 was estimated to be 2.3 per cent of last year's crop, or approximately 15,062,000 bushels, as against 33,797,000 bushels in 1908, and 43,608,000 bushels, the average amount for the past ten years.

The average condition of the oats crop July 1 was 88.3, as compared with 88.7 a month earlier, 85.7 on July 1, 1908, 81 in 1907, and 86.8, the ten-year average.

The average condition of barley on July 1 was 90.2, as compared with 90.6 a month earlier, 86.2 on July 1, 1908, 84.4 in 1907, and 88.3, the ten-year average.

The average condition of rye on July 1 was 91.4, as compared with 89.6 a month earlier, 91.2 on July 1, 1908, 89.7 in 1907, and 89.8, the ten-year average.

The acreage of white potatoes is estimated as 3,452,000 acres, or 195,000 acres, equivalent to 6 per cent, more than last year. The condition of the crop on July 1 was 93, as compared with 89.6 on July 1, 1908, 90.2 in 1907, and 91, the ten-year average.

The acreage of tobacco is estimated as 1,108,336 acres, or 232,911 acres, equivalent to 26.6 per cent, more than last year. The condition of the crop on July 1 was 89.8, as compared with 86.6 on July 1, 1908, 81.3 in 1907, and 90.4, the July average of the last six years.

The average condition of the hay crop on July 1 was 87.8, as compared with 87.6 a month earlier, 92.6 on July 1, 1908, and approximately 82 in 1907. The condition of timothy on July 1 was 87.1, as compared with 90.2 on July 1, 1908, 82.2 in 1907, and 85.1, the ten-year average. The condition of clover on July 1 was 83.8, as compared with 95.5 on July 1, 1908, 76.4 in 1907, and 83.8, the ten-year average.

The condition of the apple crop on July 1 was 54.6, as compared with 61.4 a month earlier, 57.6 on July 1, 1908, and 62.3, the ten-year average.

In Massachusetts the acreage of corn is 47,000 acres, or 104, as compared with last year, and the condition July 1

was 95; the average condition of oats was 95; the average condition of rye was 97; the acreage of tobacco was 4,377 acres, or 97, as compared with last year, and the average condition was 95; the acreage of Irish potatoes was 34,000 acres, or 105, as compared with last year, and the average condition was 92; the average condition of timothy was 94; the average condition of clover was 94; the average condition of all hay was 93; the average condition of pastures was 90; the average condition of apples was 75; the average condition of peaches was 80; the average condition of pears was 80; the average condition of grapes was 89; the average production of strawberries was 94; the average condition of tomatoes was 92; the average condition of cabbages was 90; the average condition of onions was 90; the average condition of beans was 90; the average condition of blackberries was 94; the average condition of raspberries was 88; the average condition of watermelons was 81; the average condition of cantaloupes was 83; the average condition of Canadian peas was 100; and the average condition of millet was 92.

TEMPERATURE AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM UNITED STATES NATIONAL WEEKLY WEATHER BULLETIN.]

Week ending July 5. — Generally high temperatures continued, as during the preceding week, over nearly all districts, until near the end of the week, when a decided change to cooler weather set in over the northwest, and during the remaining days of the week overspread all districts from the Rocky Mountains eastward. The mean temperature for the week was above normal in all districts, except from the upper Ohio Valley and Lake region northeastward to New England, over scattered areas in the Southern States and on the Pacific coast. The precipitation during the week was confined generally to local showers occurring in connection with thunderstorms. Some localities received phenomenally heavy amounts, while adjoining districts had but light showers. As a rule, the precipitation was below the average over most of the districts east of the Mississippi River, especially over the Ohio valley, Middle Atlantic States and northern portion of the Gulf States.

Week ending July 12. — The cool weather that set in the latter part of the preceding week continued over most districts during the greater part of the week, the only portion not included being the lower Mississippi valley and the southern portion of the Great Plains region, where the temperatures were generally high. As a rule, the temperatures advanced slightly as the week advanced, and at the close were about normal in all northern and western districts, and decidedly above in the middle Mississippi valley and portions of the southwest. Frequent local showers characterized the weather of the week over the Missouri, middle Mississippi and Ohio valleys and portions of the east Gulf States. The week was practically rainless over large portions of the Appalachian Mountain region from Maryland northward, and only light showers occurred over southern Florida. West of the Mississippi River there was generally little or no rain.

Week ending July 19. — Continued cool weather was the rule, as in the previous week, over all northern districts, the deficiency in the mean temperature being quite marked in the extreme northwest. The deficiencies in the upper Mississippi and Ohio valleys and the Lake region also ranged from 2° to 4° . Over the Gulf States and the southwest the weather continued warm. Along the Atlantic coast, from Maine to Florida, the weather was generally moderate, the mean temperatures ranging from normal to slightly above. Considerable rainfall occurred during the first of the week from a storm of moderate area that moved from the Missouri valley eastward to the Lake region and Ohio valley during that period. Aside from this, the precipitation resulted from local storms, occurring at irregular intervals and in varying amounts, from light showers to heavy downpours over restricted areas. Good showers occurred over most of the Atlantic coast districts during the week, relieving somewhat the moderate drought that had prevailed for several weeks over the Middle Atlantic States and New England.

Week ending July 26. — Cool weather for the season of the year was again the rule over much of the territory east of the Mississippi valley, and it was also generally cool over most of the mountain districts of the west. The mean tem-

perature for the month was above the normal by small amounts over the northern portion of the country from the upper Lakes westward to the Pacific, also on the immediate Gulf coast and at a few points in California. During the 21st to 24th a storm of moderate intensity moved from the upper Missouri valley to the Atlantic coast, accompanied by general rains in the upper Mississippi valley, Lake region, portions of the Ohio valley and the Atlantic coast districts. Some unusually heavy rains occurred in portions of the upper Lake region. Aside from the above the week was comparatively free from storms of any character.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending July 5. — New England. Boston: The weather was favorable throughout the week. The precipitation was generally about normal or somewhat above in Maine, New Hampshire and Vermont, but below in the other three States. The temperature was moderate and seasonable, but with cool nights the last of the week. An average amount of sunshine was received.

Week ending July 12. — New England. Boston: No rain fell during the week, except scattered light showers. Rain is now needed. The temperature was moderate and seasonable, except for some cool nights. There was the average amount of sunshine.

Week ending July 19. — New England. Boston: The temperature was generally seasonable and slightly above normal. General and copious showers occurred during the last of the week, which, in the southern portion, relieved the threatened drought. The rainfall was above normal in some localities in Maine and Vermont, but elsewhere it was somewhat below. The sunshine was an average amount.

Week ending July 26. — New England. Boston: Occasional light showers were general over the section during the week, but, except in a few localities, the amounts for the week were below normal and more rain is needed. The temperature was moderate and generally somewhat below normal. There was an average amount of sunshine.

THE WEATHER OF JULY, 1909.

The weather of July was very pleasant, with an abundance of sunshine, temperatures somewhat below the seasonal average, and, except in a few localities, precipitation much below the normal. The month opened with a season of showers, rains falling in some portion of the State daily from the 1st to the 6th, inclusive. The rainfall, however, was generally light. From the 7th to the 15th, inclusive, there was very little rain, with the exception of fairly well distributed showers in the western portion of the State on the 11th and 12th. Rains were quite general on the 16th, 17th and 18th, with substantial amounts in some sections. With the exception of scattered local showers the remainder of the month was dry. The month as a whole was considered very dry, with the total rainfall ranging from 40 to 60 per cent below the July normal. There were fewer local disturbances and thunderstorms than usual. The daily temperatures ranged from 2° to 6° below the average during the first decade. A warm spell prevailed from the 12th to the 16th, during which the daily mean temperatures were from 3° to 10° above the normal for the season. During the rest of the month, with very slight interruptions, the daily temperatures were from 2° to 5° below the average. The maximum temperatures rose to 90° or slightly above on a few days during the warm term that prevailed from the 12th to the 16th, but it reached the 90s on but few occasions during the remainder of the month. The nights were generally cool for July. At the close of the month there was general need of rain and in some sections droughty conditions prevailed. Owing to the high per cent of sunshine and the uniformly moderate temperatures the weather of the month, generally speaking, was exceptionally pleasant.

In the circular to correspondents, returnable July 22, the following questions were asked:—

1. What insects are proving most troublesome in your locality?

2. What is the condition of Indian corn, and what proportion of the crop will be put into the silo?

3. What is the quantity and quality of the hay crop as compared with former years?

4. What forage crops are being raised to supplement the hay crop, for the silo and to eke out the pastures, and what is their condition?

5. What is the condition of market-garden crops, including potatoes, and how have those already harvested compared in yield and price with former years?

6. What is the prospect for apples, pears, peaches, plums, quinces, grapes and cranberries?

7. What is the condition of pasturage in your locality?

8. How have rye, oats and barley compared with former years, both as grain and forage crops?

9. Are bees kept in your town, and if so to what extent?

Returns were received from 140 correspondents, and from them the following summary has been made up:—

INSECTS.

There is less complaint of damage by insects than usual, many correspondents saying that no insect seems to be doing noticeable damage. The potato bug is the one most commonly reported, but does not appear to be unusually plentiful or destructive in any locality. The elm-leaf beetle is reported in every county except Berkshire and the Islands, and seems to be especially numerous in eastern sections. There is no doubt that this pest is extending its area and forms a serious menace to our most beautiful shade trees. Gypsy moths are reported by fifteen correspondents, in eastern sections, as doing damage, a greater number than have previously complained of this insect. Other insects mentioned are plant lice, which seem to have been unusually plentiful this year, cabbage worms, tent caterpillars, squash bugs, flies on horses and cattle, white grubs, grasshoppers, the San José scale, cut worms, the codling moth, the pear tree psylla, black ants, spittle insects and cranberry vine worms.

INDIAN CORN.

The corn crop was reported as still backward, but growing very rapidly with the advent of warm weather, and generally promises well with seasonable weather during August. There were some reports of its being checked by drought, but they were not numerous, and this condition has doubtless been relieved, temporarily at least, by the recent showers. No appreciable gain is noted in the use of silos, even in sections where they have been installed in considerable numbers. It is impossible to say, with any degree of accuracy, what proportion of the whole crop is used for ensilage, it varying from the bulk of the crop in some strictly dairy sections to almost nothing in the southeastern counties. There are some reports of the grain being allowed to mature and the stover shredded and put into the silo, a practice common in some States, but rarely practiced in Massachusetts.

THE HAY CROP.

The hay crop appears to be uneven, some sections reporting a heavy crop while in others it was practically a failure. A summary of the returns shows 67 correspondents who consider the crop average or above, and 69 who consider it below the usual average. The number of those who report favorably is swelled by almost solid returns from the southeastern counties, where the crop appears to have compared unusually well with other years. For the rest of the State, where it is proper to say the greater part of the crop is found, the returns would indicate a crop considerably below the normal, probably three-fourths of a normal crop, or even less. It was generally secured in excellent condition, there being practically no damage from rain, and the correspondents are unanimous in reporting the quality of the crop as excellent. Rowen had not started well at time of making returns, owing to dry weather, and copious rains are needed if the second crop is to be of any particular value.

FORAGE CROPS.

The usual acreage of forage crops seems to have been put in, though not enough attention is given to this line of work by most farmers. Corn is the crop most frequently mentioned, though millet is a very close second, having apparently gained in favor of late, with oats, Hungarian grass and barley following in the order named. Other forage crops reported are oats and peas, vetch, rye, peas, wheat, cabbage and root crops. None of them at time of making returns was in first-class condition, having been somewhat checked by the dry weather.

MARKET-GARDEN CROPS.

Market-garden crops were rather injured by the moderate drought, in some cases ripening prematurely and together to such an extent as to glut the market. Prices have ruled about average, except for a few days of oversupply on certain crops. Those not yet harvested are in need of heavy rains, but should do well with seasonable weather and a suitable supply of moisture.

POTATOES.

Practically no potatoes had been dug at the time of making returns, the crop being rather backward. The yield has undoubtedly been injured by the dry weather, especially for early potatoes, which will be nearly a failure in many sections. It is not too late for a good yield of the later varieties, but more rain is much needed by this crop at time of going to press.

FRUITS.

Apples will be a light crop in most sections, the drop having been severe and prolonged. Pears and plums are rather light yields, according to present indications. Peaches are a light crop, except in a few favored sections, and there seems to be less interest taken in this fruit than formerly. There are few reports on quinces, but those received are in the main favorable. Grapes generally promise a very good crop, barring unforeseen conditions. Cranberries are reported to have

set very well and promise well at time of making returns, but it is of course too early to form a definite opinion as to the crop.

PASTURAGE.

Pasturage was generally reported as having suffered severely from the dry weather, and in some sections it is practically all dried up. Some improvement is noted since the recent showers, but frequent and copious rains are needed to bring it to normal condition. The grass in pastures is probably in poor condition to stand any extended period of dry weather, because of the severe drought of last summer and fall.

SMALL GRAINS.

Rye apparently was a good crop in most sections, coming forward sufficiently early to escape the effects of the dry weather. Oats on the other hand are reported as short and badly rusted in many cases, so that the crop will be a poor one, both for grain and forage. Barley is little grown except for late forage, and is not far enough advanced to report on for that purpose.

BEE KEEPING.

As expected, the bulk of the correspondents report that few colonies of bees are kept in their towns, but only 17 report that there are none at all kept. The interest seems to be increasing and many farmers have a few swarms. Large apiaries are not frequent, but nevertheless there is more interest manifested than was the case a few years ago. Farmers make a mistake to neglect these useful creatures. Ten or twelve colonies can be kept on almost any farm, with practically no expense, and will furnish a fine table delicacy for the home, as well as a surplus for market.

NOTES OF CORRESPONDENTS.

(Returned to us July 22.)

BERKSHIRE COUNTY.

New Marlborough (E. W. RHOADES). — Potato bugs have been rather plenty; also plant lice on cherry and pear trees. Corn is making a fine growth and promises a good crop; not many silos filled of late years. Haying is well along; quality fine, but quantity reported short. Sowed corn and sweet corn are raised for forage crops. Strawberries were a good crop. Early potatoes will be a small crop, from drought. The prospect for apples is not good; peaches and grapes seem all right, also plums. Pastures are in fair condition, but need rain. There is a big crop of rye. Perhaps one-fourth of our farmers keep a few bees, just to make honey for home use.

Tyringham (EDWARD H. SLATER). — Potato bugs are proving our most troublesome insect. Indian corn is backward, but making rapid growth; about one-fourth the crop will be put into the silo. The hay crop on new seeded lands is turning out well; other fields very light; quality excellent. Sowed corn and Japanese millet are extensively raised to eke out pasture feed. There will be a good crop of apples, grapes and berries. The recent dry weather has affected the pastures badly.

West Stockbridge (J. S. MOORE). — Potato bugs and cabbage worms are doing damage, but less than usual. Corn has made a rapid gain in the last month and is looking well; only one silo in town. The hay crop was larger than usual and of better quality. Forage crops are little raised, a few farmers sow small patches of corn. Market-garden crops are looking well, but are later than usual; potatoes look well. There will be fair crops of apples and pears; very few other fruits raised. The dry weather told on pastures, but recent rains have helped them materially. There is some complaint of rust on oats; rye and barley little raised. Do not know of a hive of bees in town.

Becket (WM. H. SNOW). — Potato bugs and currant worms are doing damage. Indian corn is very late and a big share of the crop will be put into the silo. Quality of the hay crop fine, quantity not average. Corn, oats and millet are the forage crops grown. Market-garden crops are looking finely; no potatoes dug yet. Fruit of all kinds will be light. Pasturage is in very good condition. Very few bees are kept, though one man has about 50 colonies.

Washington (E. H. EAMES). — Potato bugs are doing some damage. Indian corn is from three to four weeks later than usual; about the usual amount will be used for ensilage. The hay crop was about average in both quantity and quality. Corn is the principal forage crop grown. Garden crops are raised only for home use. There is a good prospect of full yields of all kinds of fruit. Pasturage is in good condition. Oats are average crops; rye and barley not grown. A few hives of bees are kept to produce honey for home use. All crops look well, though backward.

Richmond (TIMOTHY B. SALMON). — Potato bugs and black ants are our most troublesome insects. Corn is in very good condition; only one silo in town. The hay crop was average in quantity and of good quality. Fodder corn, oats and barley are the forage crops raised and are in good condition. Market-garden crops are average in yield and price. There is an average prospect for apples, pears, peaches, quinces and grapes. Pastures are in good condition. Rye little raised; oats and barley average crops. There are some 20 to 25 hives of bees in town.

Hinsdale (THOS. F. BARKER). — Potato bugs are doing some damage. The corn crop is in fair condition; probably one-third goes into the silo. The hay crop was just about average. Millet and sweet corn are raised as forage crops, but not half what there should be. Potatoes are not yet harvested. There should be a good crop of fruit. Pasturage is in very good condition; one heavy shower did the work. Rye, oats and barley are not raised here. One man has 20 swarms of bees and does well with them.

Dalton (WESLEY B. BARTON). — Potato bugs are doing some damage. Indian corn is in fair condition and two-thirds of the crop will go into the silo. The hay crop is 80 per cent of the normal in quantity and No. 1 in quality. Millet is the principal forage crop grown. Market-garden crops are in good condition. Pasturage is in good condition. Apples 75 per cent of a full crop; pears 20 per cent; plums 80 per cent. Rye, oats and barley are full average crops. Some bees are kept here.

New Ashford (W. F. SMITH). — Potato bugs are doing some damage. Indian corn is nearly a month late. There is about three-fourths of a crop of hay, of very good quality. Fodder corn and millet are the principal forage crops grown and they are late. Potatoes have looked well, but need rain. The prospect is fairly good for fruit. There is no feed in pastures, owing to dry weather. It is too early to report on rye, oats and barley. Bees are not kept in this town.

FRANKLIN COUNTY.

Rowe (N. E. ADAMS). — Potato bugs and tent caterpillars are doing damage. Corn is in the poorest condition ever known for the time of year and nearly all of it will be put into the silo. The hay crop is below average in quantity but extra good in quality. Japanese millet is the principal forage crop grown. Potatoes are looking very well.

Fruit is very uneven. Pasturage is in good condition. Rye, oats and barley are about average crops. Six or eight different people keep from 2 to 20 hives of bees.

Ashfield (ALBERT HOWES). — Potato bugs are plentiful and flies are very troublesome to cattle. Indian corn is somewhat backward; should say 75 per cent would go into the silo. The hay crop is rather uneven, but generally above former years. Millet and fodder corn are the principal forage crops grown and are rather backward. Potatoes are looking well. The apple crop is rather uneven, other fruits looking well. Pasturage is looking well considering the dry weather we have had. Rye, oats and barley are little raised; condition not up to the standard. Very few bees are kept in town.

Bernardston (R. H. CUSHMAN). — Potato bugs are very numerous. Corn is still backward and at least 60 per cent will go into the silo. The hay crop was uneven, not average in quantity, but the quality was very good. Corn, oats and Japanese millet are the principal forage crops grown and are in average condition. Early potatoes have suffered from want of rain. There will be very little fruit, but berries are plentiful. Pastures are much browned and very dry. Oats show much rust, but are in fair condition. The interest in bees is increasing, from 1 to 12 swarms being kept by different owners.

Gill (F. F. STOUGHTON). — Indian corn is late and a small portion of the crop will go into the silo. The hay crop was a little better than that of last year. Corn and oats are the principal forage crops grown. Garden crops are in good condition. There will be very few early apples; grapes promise a good crop. Pasturage is in very good condition. Rye, oats and barley are average crops. Bees are not kept in this town. Strawberries and blackberries are good yields.

Whately (C. L. CRAFTS). — Potato bugs are the only insects doing damage. Corn is in very good condition and perhaps one-third the crop will go into the silo. The hay crop was heavier than usual and of excellent quality. Hungarian grass, millet and oats are the principal forage crops grown, but they are not at present in good condition. Potatoes were checked by the extreme drought; none being marketed as yet. There will be a fair yield of fruit, though apples are rather light. The dry weather has hurt the pastures. Rye, oats and barley are not up to the average. A great many bees are kept here.

Sunderland (GEO. P. SMITH). — Insects are not as numerous as usual. Indian corn is doing well, of good color, but a little late though now making good growth; one-half the crop goes to the silo. The hay crop was average in quantity and of good quality. No forage crops are grown. The yield of market-garden crops was rather light, prices average; no potatoes harvested. There will be half a crop of apples; pears few; plums few; grapes promise well. Pasturage was getting short, but has improved since the rain. Rye, oats and barley are little grown. There are a few hives of bees in town.

Montague (A. M. LYMAN). — Potato bugs, elm-leaf beetles and black squash bugs are doing damage. Indian corn is good but late; a few fields are cut green for the silo, but most are husked and then shredded for the silo. Fodder corn and Japanese millet are the principal forage crops and are in very good condition. Market-garden crops are in very fair condition, those harvested being better than usual in yield and price; off year on squashes. Apples and grapes will give half crops; there are few plums; pears one-fourth average crop; peaches a good yield. Pasturage is in better condition than usual, though getting rather short now. Rye has proved a great crop; oats fair. A dozen farmers have 100 colonies of bees in all. Tobacco looks well and that set early is being topped. The onion crop is not proving as satisfactory, there being much damage from maggots.

Northfield (T. R. CALLENDER). — Plant lice on plum and cherry trees are unusually abundant. Indian corn is in good condition, though still backward; about one-third the crop is grown for ensilage. The hay crop was generally light, but of good quality. Millet, oats and vetch are grown for forage and are all looking well. Potatoes look unusually well and prices are average. There will be an average crop of apples. Pasturage is in good condition for the time of year. All grains are looking well. Bees are not kept to any extent.

New Salem (DANIEL BALLARD). — Potato bugs and elm-leaf beetles are quite plenty. The stand of corn is good, but is rather backward; perhaps one-third will be put into the silo. As a whole the hay crop was hardly up to the average. Fodder corn, oats and Hungarian grass are the principal forage crops grown and are looking well. Not much is done here in the market-garden line. There is a fair outlook for apples and pears; grapes are quite promising. Pastures have suffered from dry weather, but are improving since the rains. Rye, oats and barley are fully average crops. Bees are not much kept, but we have one, and perhaps more, successful beekeepers. Wild deer are doing considerable damage.

HAMPSHIRE COUNTY.

Greenwich (WALTER H. GLAZIER). — Potato bugs are most troublesome. Indian corn is a little backward, but is looking well; but little is raised for ensilage. Hay was nearly a full crop and of fine quality. A small amount of millet is grown, but is mostly cured for hay. Market-garden crops are not grown to any account. But little fruit is grown for market; apples appear to be dropping. Dry weather has much affected pastures. Oats have rusted; only grown for hay. Bees are not kept here. Rain is much needed.

Pelham (JOHN L. BREWER). — Grasshoppers are quite numerous. Indian corn is rather backward, but looking quite well; only one silo in town. Quality of hay crop fine, but quantity only 50 per cent of the normal. Some fodder corn has been planted for forage and is

looking well. Late potatoes are looking well. Apples will be a short crop; pears less; peaches few; plums promising; quinces a failure; grapes a full crop. Pastures hold out as well as could be expected. Rye is a fine crop; oats a trifle short; no barley grown. Bees are few and far between.

Amherst (WM. P. BROOKS). — Plant lice, elm-leaf beetles and potato bugs are doing damage. Indian corn is uneven and some fields are very late, but in general is in good condition; about one-half goes into the silo. The hay crop was average except on run-out fields. Corn, Japanese millet and Hungarian grass are the forage crops grown and are generally in good condition. Market-garden crops have been good, except on light soils of low fertility. Apples fair; grapes fine; pears poor; peaches good; plums good; quinces few. Pastures are short and dry. Rye is a good crop; oats rusted and poor; no barley grown. There are probably 175 colonies of bees in town and the industry is on the increase.

Hadley (L. W. WEST). — No insects are doing damage. Indian corn is a week late; about one-sixth the crop is grown for the silo. The hay crop was 85 per cent of the normal in yield and 105 in quality. Japanese millet and corn are the principal forage crops and are in good condition. Market-garden crops were injured by dry weather; potatoes look well, none dug yet. Apples good; pears poor; no peaches; plums good; quinces poor; grapes good. Pasturage is short and dry. Rye is a good crop; oats a three-fourths crop; no barley grown. Very few bees are kept here. The rain of the 16th did much good.

South Hadley (W. F. PERSON). — Corn looks well, but will be late; about two-thirds goes into the silo. Japanese millet is the principal forage crop grown, with some Hungarian grass and oats. Market-garden crops are looking well; no potatoes harvested as yet. There will be a very light yield of all kinds of fruit in this locality. Pastures are not in very good condition. Rye is better than the average, but oats and barley are very poor crops, heading out very short on account of the dry weather. Potatoes are looking well, but the crop will be light, owing to lack of rain.

Southampton (C. B. LYMAN). — The potato bug is the only insect doing damage. Corn has been slow of growth on account of drought; about 20 per cent of the crop is grown for the silo. The hay crop was below the normal in quantity, but never better in quality. Corn and millet are the principal forage crops grown and are slow in growth. No potatoes have been harvested as yet; market-garden crops give light yields. Apples will be a light crop as they are dropping badly; peaches, pears and grapes promise well. Pastures are badly dried up. Rye and oats are average crops. Few bees are kept here. Tobacco is late and small.

Westhampton (LEVI BURT). — Potato bugs are doing some damage. Corn is in good condition, though backward; probably 75 per cent

will go into the silo. The hay crop is about up to the average and of good quality. Japanese millet and corn are the principal forage crops. No potatoes have been dug as yet. There will not be over half a crop of apples; very few pears, peaches, plums and quinces; vines full of grapes. Pasturage is very dry and short. Rye, oats and barley are not raised. The bee industry has taken on new life this summer; one party has 10 hives, one 3, and several others have a hive or two.

Chesterfield (HORATIO BISBEE). — Potato bugs are very troublesome. Corn is looking well; perhaps one-fifth part may be put into the silo. Hay will fall quite a little short of a full crop, but is of good quality. Corn, millet and Hungarian grass are the forage crops most raised. It is yet too early to decide about the apple crop; other fruit not much raised. Pasturage is getting short. Bees are little kept.

Goshen (ALVAN BARRUS). — Potato bugs are doing damage. Indian corn is two weeks late and more than half the crop will go for stover and into the silo. Quantity of hay crop below average and quality fair. Oats, millet and Hungarian grass are the principal forage crops grown. Potatoes do not promise well. There will be light yields of all kinds of fruit. Pastures as a rule are lightly stocked and consequently are in fair condition. Rye, oats and barley are not above average crops. There are only 1 or 2 colonies of bees in town.

HAMPDEN COUNTY.

Russell (E. D. PARKS). — Potato bugs are doing some damage. Corn is looking very nicely; about one-fourth is raised for the silo. There was about an average crop of hay of good quality. Oats and millet are the principal forage crops grown. But little is done with market-garden crops. Grapes look well, but all other fruit is below the average. Pastures are very dry just at this time. Oats and barley are average crops; rye very good. Bees are but little kept about here.

Agawam (J. G. BURT). — There are very few insects at the present time. Corn is a little late, but stands well, and two-thirds the crop will go into the silo. The quantity and quality of the hay crop is good and up to former years. Corn and barley are the principal forage crops and are small, owing to drought. Potatoes are not up to the average in condition and none have been dug as yet. Apples good; pears, peaches and plums light; quinces, grapes and cranberries good. Pastures are in fair condition. Rye, oats and barley are about normal crops. Two men keep from 40 to 50 colonies of bees each.

West Springfield (T. A. ROGERS). — Flies on cattle and horse are very troublesome. Indian corn is looking well now, but is late and drought has injured it somewhat. Quantity of the hay crop about normal and quality good. Oats and corn are the forage crops grown. All garden crops were injured by drought; potatoes a half crop on light land. Apples are falling badly; pears light; peaches, plums and grapes good; few quinces. Pasturage is very dry and short now.

Rye, oats and barley are fully up to the average. Very few keep bees. Tobacco and onions are little raised.

Chicopee (C. G. CHAPIN). — Potato bugs, elm-leaf beetles and scale insects are doing damage. Indian corn is generally in good condition; perhaps half the crop will be put into the silo. On new seeded ground the hay crop was good, on old seeded, light; haying now nearly completed. Oats and peas for forage are a light yield; too early to predict on barnyard millet. The prospect for most fruits is good. Pasturage has been good, but is rather drying up now. Rye is a good average crop; oats poor. Only a few hives of bees are kept.

East Longmeadow (JOHN L. DAVIS). — Potato bugs are doing damage and white grubs are eating strawberry plants. Indian corn is a little backward, but should rapidly improve. Hay is quite backward, but is nearly an average crop of good quality. Oats, millet and Hungarian grass are the principal forage crops and they are not in very good condition. Market-garden crops all ripened at once, which hurt the price. Apples are dropping, but promise a fair crop; pears fair; peaches plenty; grapes good. Pasturage is very short. Rye is a fair crop; oats the poorest ever known. A very few swarms of bees are kept; not enough white clover and buckwheat raised for bees to do well.

Wilbraham (H. M. BLISS). — Potato bugs are doing some damage. Indian corn is 90 per cent in condition and 15 per cent of the crop goes into the silo. The hay crop was an average one in quantity and quality. Fodder corn is the principal forage crop and is looking fairly well. Market-garden crops, including potatoes, are average in yield and price. Apples 50; pears 85; peaches 95; plums 90; quinces 85; grapes 95. Pastures are very dry. Rye and barley are average crops. Very few bees are kept.

Monson (F. D. ROGERS). — Potato bugs and elm-leaf beetles are doing damage. Indian corn is backward, but is looking well; probably half the crop goes into the silo. There was about a normal yield of hay, secured in good condition. Fodder corn and Japanese millet are the principal forage crops grown. Potatoes are looking well and with recent rains should make a good crop; they bloomed profusely. Apples and pears are light; peaches, plums and grapes promise well. Pasturage is in very poor condition, owing to dry weather. Rye has made a good growth; oats have done well, but are mostly cut for hay. Bees are not kept to any great extent.

Palmer (O. P. ALLEN). — The elm-leaf beetle, currant worms and potato bugs are doing some damage. Indian corn is very backward, but recent rains have improved it; dry weather cut down the hay crop but the quality was good. The usual amount of forage crops have been sown, but they do not promise well unless we have much rain soon. Market-garden crops compare favorably with other years in yield and price. The dry weather has had an unfavorable effect on

fruit, but with rain a good crop is expected. Pasturage is not in as good condition as earlier in the season. Rye, oats and barley are not as good as usual. Bees are not kept to any extent.

WORCESTER COUNTY.

Warren (W. E. PATRICK). — Potato bugs are about the only insect doing damage. Indian corn is looking well, but is very backward; possibly one-tenth the crop will be put into the silo. The hay crop is about two-thirds of the normal in quantity and of excellent quality. Fodder corn, millet, oats and Hungarian grass are the principal forage crops grown and are in fairly good condition. Potatoes are looking well, none harvested yet; not much done in market-garden crops. The prospect is poor for apples; peaches will be a full crop; grapes are looking finely; not many pears. Pasturage is the poorest for the time of year that I can remember. Rye is fairly good; oats a failure; barley not grown. Bees are kept by a few persons, but not to any great extent by any one.

Brookfield (FRANK E. PROUTY). — Potato bugs are doing some damage. Indian corn is about ten days late; not over one-fourth will be put into the silo. The hay crop is about three-fourths of last year's in quantity and of good quality. Corn, millet and barley are the principal forage crops grown. Market-garden crops are injured somewhat by dry weather. Apples, pears and peaches are not half a crop; plums and grapes good. The dry weather has injured pasturage quite badly. Rye, oats and barley are about average crops. There are perhaps 100 colonies of bees in town. The dry weather since July 1st has hurt potatoes.

Oakham (JESSE ALLEN). — Potato bugs are doing some damage. Corn is backward, and perhaps one-fourth of it will go into the silo. Hay is about two-thirds of a normal crop in quantity and of excellent quality. Indian corn, Hungarian grass and millet are the principal forage crops grown. Potatoes are looking better since the rain; yield and price of market-garden crops about average. Grapes are abundant, but other fruits are very poor. Pasturage is very short. Rye, oats and barley are very light crops. Very few bees are kept here.

Dana (LYMAN RANDALL). — Potato bugs are doing some damage. Indian corn is looking well, but is late; one-third of the crop will go into the silo. The hay crop is an average one and above average in quality. Corn is the principal forage crop grown and it is looking well. Market-garden crops are looking well and those harvested compare favorably with other years in yield and price. Apples have dropped badly and will be a small crop; other fruits promise fair yields and grapes a very large yield. Pastures are rather short, owing to dry weather. Oats and barley are average crops; rye little grown. There are several who keep a few swarms of bees, but no large apiaries.

Templeton (LUCIEN GOVE). — Potato bugs, cabbage worms and

codling moths are doing damage. Indian corn is nearly two weeks late; three-fourths of the crop will go into the silo. The quality of the hay crop is good, and the quantity, though disappointing, was more than last year. Corn, oats, barley millet and Hungarian grass are raised for forage; first two poor, others good. Potatoes are backward; market-garden crops not up to normal. Apples very poor; pears fair; peaches none; plums poor; quinces not raised; grapes fair. Pastures are very poor owing to drought. Rye is a fair crop; oats rather poor; barley fair. Bees are kept in a limited way.

Royalston (C. A. STIMSON). — Potato bugs are doing some damage. Corn is very small and late and one-fourth the crop will go into the silo. Hay is a normal crop of good quality. Oats and barley are the principal forage crops grown and are in good condition. Drought has affected garden crops; no potatoes dug as yet, price will be high. Apples are a small crop, as indeed are all fruits, except pears and plums. Pastures are badly affected by drought. Rye, oats and barley are three-fourths crops. Bees are kept to a small extent.

Gardner (W. E. KNIGHT). — Potato bugs are doing some damage. Indian corn promises a three-fourths crop; nearly all in this section will go into the silo. The hay crop was about 60 per cent of a normal yield, but was of good quality. Barnyard millet and barley are the principal forage crops grown and they look poorly. Potatoes are very uneven and are not ready for market. Apples are uneven, and as a whole will not be more than half a crop. Pastures are about in normal condition. Rye, oats and barley are 75 per cent of normal crops. Bees are not kept here.

Fitchburg (DR. JABEZ FISHER). — Potato bugs and pear psyllas are doing damage. Indian corn is looking very well. The hay crop was a little late, but an average yield of good quality. Market-garden crops have yielded well and mostly brought good prices. Apples 20 per cent of a full crop; pears 25 per cent; plums quite variable; grapes 100 per cent. Feed in pastures is much shortened through want of rain. Bees are not kept to any extent.

Hubbardston (CHAS. C. COLBY). — Cut worms and potato bugs are the most troublesome insects. Corn is very backward; probably 60 per cent of the crop will be put into the silo. There is about an average crop of hay of good quality. Oats, Hungarian grass, Japanese millet and barley are the forage crops grown. Potatoes are generally looking well, none harvested. The apple crop will probably be below the average. Pasturage has kept very good, although rain is badly needed. Oats are doing well. Only a few bees are kept to produce honey for home use.

Princeton (A. O. TYLER). — Insects are not very troublesome just now. Indian corn is looking well, but is backward; three-fourths the crop is grown for the silo. The quality of the hay crop is good, but the quantity is a third below the normal. Corn, millet and barley are

the principal forage crops and are in fair condition. No potatoes have been harvested as yet. Apples, pears and peaches are poor; plums good; quinces poor; grapes good. Pasturage is poor, owing to dry weather. Rye, oats and barley are raised entirely for forage and are from one-half to two-thirds crops. Very few bees are kept.

Sterling (HENRY S. SAWYER). — Potato bugs are doing damage. Corn is coming ahead very fast since the rain. There will be about the usual quantity of hay and the quality is good. Oats, barley and millet are the principal forage crops and they are looking well. Potatoes, peas, beans, etc., have suffered from the dry weather; peas and beans bring good prices. Apples and pears will be rather light crops; other fruits looking fairly well. Feed is drying up in pastures in some localities. Rye, oats and barley are all raised for forage. Bees are kept only to a small extent.

Worcester (H. R. KINNEY). — Potato bugs are the insect doing the most damage. Corn is very late, but growing fairly now; less will be put into the silo than usual. The hay crop has been rather light, but is of good quality. Millet and cabbage are used with corn fodder as forage crops. All garden crops are late; potatoes do not look as well as usual. Apples have dropped badly, but there are some left; plums and peaches fair; grapes looking well. Pasturage has been damaged by dry weather, but looks better since the showers. Rye, oats and barley are cut for fodder and have been light. There are a few bees kept, but they do not seem to do as well as they should.

Leicester (H. H. KINGSBURY). — Potato bugs and grasshoppers are numerous. Corn is growing finely, but is backward; about half the crop goes into the silo. Hay was nearly average in quantity and of excellent quality. Fodder corn, millet and oats are the forage crops grown. Potatoes look thrifty, but need rain to develop well. The prospect now is not what the bloom promised for fruit, with the exception of grapes and blackberries. Pastures are very much shortened by dry weather. A few swarms of bees are kept by a few individuals.

Blackstone (O. F. FULLER). — Unless farmers open their eyes the San José scale will have both fruit and fruit trees. Corn is a little backward on account of the cool summer; no silos in town. There was an average crop of hay of good quality. Considerable Japanese millet is grown as a forage crop. Market-garden crops are in fair condition; no potatoes have yet been harvested. There will be very poor yields of apples and pears; some peaches and plums; good outlook for grapes. Pasturage is a little short. Rye, oats and barley are good crops as forage crops. There are possibly ten beekeepers in town. Your correspondent makes a business of beekeeping, having queens and colonies for sale, and will this season have half a ton of honey from 20 colonies, spring count.

MIDDLESEX COUNTY.

Hopkinton (W. V. THOMPSON). — Elm-leaf beetles and spittle insects are doing damage; potato bugs very few and easily handled. Indian corn is in good condition, but from a week to ten days late, owing to drought; large proportion raised for silo. The quality of the hay crop was good, but the yield was light and there is little prospect for rowen. Hungarian grass and millet are the principal forage crops grown and are in fair condition. Potatoes are suffering from drought. There will not be many apples, pears or peaches; plums set for good crop; full crop grapes set. Pasturage is getting dry. Rye is a good crop; oats light; barley best of the three. Not many bees are kept here. Sowed half an acre of barley last May, which came into bloom in sixty-one days, and is almost two feet high.

Marlborough (E. D. HOWE). — Potato bugs and elm-leaf beetles are doing damage. Indian corn is rather backward; about half the crop goes into the silo. Quantity of the hay crop 75 per cent; quality 95 per cent. Millet, sweet corn and peas and oats are raised for forage crops and are in fair condition. Apples 75 per cent; pears 50 per cent; peaches 70 per cent; plums 30 per cent; quinces 75 per cent; grapes 95 per cent. Feed in pastures is badly dried up. Rye, oats and barley are about normal crops. About half a dozen people keep from 1 to 5 hives of bees.

Stow (GEO. W. BRADLEY). — Brown-tail moths and elm-leaf beetles are doing some damage. Corn looks well, but is backward; very little raised for the silo. The hay crop was a smaller cut than usual, but was of fair quality. Oats, Hungarian grass and Japanese millet are the principal forage crops grown and are looking fairly well. Apples and pears are dropping badly; other fruits scarce. Pastures were looking quite brown, but the rains will improve them. Rye, oats and barley are about average crops. But very few keep bees.

Littleton (GEO. W. SANDERSON). — The elm-leaf beetle, brown tail and gypsy moth and potato bugs are doing damage. Corn is in good condition; about two-thirds the crop goes into the silo. The hay crop is much larger than last year and of better quality. Millet, Hungarian grass and oats are the forage crops grown, and they are in good condition. There is a light fruit crop in general, though pears are fair. Pasturage is very good. Rye, oats and barley are good crops, but are little raised for grain. Few indulge in keeping bees; only two persons keep them to any extent.

Townsend (GEO. A. WILDER). — Potato bugs and the brown-tail moth are our most troublesome insects. Indian corn is a little pinched by the dry weather, but promises an average crop. The hay crop was average in quantity and of very good quality. Corn is the principal forage crop grown. Market-garden crops have been good and promise well. It looks as though we should have an extra crop of fruit.

Pasturage is poor, hurt by dry weather. Bees are not kept to any extent.

Dunstable (A. J. GILSON). — The black squash bug and potato bug are the most troublesome insects. Indian corn has improved very fast since the rain of last week. Hay has proved a better crop than was expected and is about up to former years. Corn, oats, Hungarian grass and barley are raised for forage and are in good condition. No market-garden crops are grown and no potatoes harvested. The apple crop will be very light; also pears, peaches and quinces; plums a fair crop; cranberries have set well. The pastures are in poor condition and there is very little in them that the stock can eat. Rye, oats and barley are raised principally as forage crops. Only a few hives of bees are kept in town.

Chelmsford (WALTER B. BULLOCK). — Brown-tail and gypsy moth caterpillars are our worst insects. Corn is looking well since the rains; one-half the crop or more is used for the silo. There will be about three-fourths of a hay crop of good quality. Oats, barley, Japanese millet and corn are the principal forage crops and they are looking finely. Potatoes are looking well; other garden crops somewhat injured by dry weather. There was a heavy fruit bloom and fruit has set well and is growing fast. Pasturage is not in very good condition. Rye, oats and barley are about average crops. Only a few bees are kept here.

Carlisle (WILLIAM A. CLARK). — Squash bugs, potato bugs and gypsy moths are doing some damage. Indian corn looks well; nothing but the fodder is put into the silo. The quality of hay is good and the crop a light one. Oats, Japanese millet, fodder corn and Hungarian grass are the principal forage crops grown, and they look finely. Potatoes never were better; none harvested as yet. Apples, pears, peaches, plums and quinces are scarce; grapes and cranberries show a full crop. Pasturage is poor, owing to dry weather. Rye, oats and barley are not raised for grain; look well as forage. Bees are not kept here.

Lincoln (C. S. WHEELER). — Gypsy moth caterpillars and potato bugs are doing damage. Indian corn is backward and three-fourths of the crop will go into the silo. Hay was not quite average in quantity but was of good quality and secured in good order. Corn, Hungarian grass and Japanese millet are the forage crops grown; corn backward; others good though late. Apples have dropped very badly; other fruits not looking as well as usual, except grapes. Pastures have suffered from drought. Rye, oats and barley are fully average for fodder, none grown for grain. Only a few hives of bees are kept and most of them for greenhouse purposes.

Stoneham (J. E. WILEY). — Potato bugs are doing some damage. What little Indian corn is grown will go into the silo. The hay crop is above average in quantity and quality. Market-garden crops are

in fair average condition. Apples and peaches promise good crops; pears fair and grapes fine; gooseberries good. Pastures were dry, but have improved with the recent rains. Very few bees are kept here.

Newton (G. L. MARCY). — Indian corn is not raised. The hay crop was average in quantity and of good quality. Millet and corn are the principal forage crops grown. Pasturage is in poor condition. Rye, oats and barley are good crops. Very few bees are kept here. The rainfall has been light and the hot weather has kept vegetation back.

ESSEX COUNTY.

Salisbury (WESLEY PETTENGILL). — Gypsy moth caterpillars are doing the most damage of any insect. Corn is looking finely; only a small part goes into the silo. Quantity of the hay crop three-fourths of the average; quality good. Fodder corn and Hungarian grass are the principal forage crops and are in fair condition. Apples will be light; pears light; peaches fair; plums light. Pasturage is fair for the time of year, but on high ground is pretty well dried up. Rye, oats and barley are little raised for grain. Very few bees are kept. Squashes are looking finely.

Amesbury (F. W. SARGENT). — Insects are very scarce just now. Indian corn is up to the average and growing rapidly now. Hay is 25 per cent short in yield on account of drought. Corn is the main forage crop, with some oats and Hungarian. Potatoes are suffering for rain, as are also onions. Winter apples are very light; fall apples dropping badly; fair amount of other fruits. Pasturage is in poor condition. Rye is in excellent condition, oats and barley fair. Bees are not much kept, now and then a hive or two. We have had two showers, with perhaps an inch of rain, since last report, but more rain is much needed; raspberries and blackberries suffering.

Groveland (A. S. LONGFELLOW). — Gypsy moth caterpillars are doing some damage. Indian corn is in good condition and one-half the crop will go into the silo. There is a three-fourths crop of hay of excellent quality. Corn is the principal forage crop grown and it is in good condition. The condition of potatoes is only fair because of drought. The prospects are for a light crop of fruit of all kinds. Pastures are very dry. Rye, oats and barley are average crops.

Andover (MILO H. GOULD). — Gypsy moths, tent caterpillars and elm-leaf beetles are doing damage. Indian corn is rather late; 80 per cent of the crop goes into the silo. The quantity of the hay crop was below average, but the quality was good. Oats, peas, fodder corn and barley are raised as forage crops and are up to the average in condition. Potatoes are not yet harvested; yield and price of market-garden crops about average. No apples or pears; peaches good; grapes and cranberries good. Pasturage is rather dry and short. Rye, oats and barley are up to the average. Bees are not kept here.

Topsfield (B. P. PIKE). — Gypsy and brown-tail moth caterpillars are doing some damage. Corn is backward on account of dry weather, but is now growing well. The hay crop was below the average in quantity and of good quality. Corn, oats and millet are the forage crops grown. Peas were injured by dry weather. All fruits are very much below the average. Pasturage is in the worst condition it has been for years. Rye, oats and barley all suffered from dry weather. Bees are not kept to any extent. Three-quarters of the corn grown is for the silo. Market-garden crops are looking fairly well.

NORFOLK COUNTY.

Randolph (RUFUS A. THAYER). — Elm-leaf beetles and potato bugs are doing some damage. Indian corn is in fine condition and three-fourths of the crop will be put into the silo. There was a good average hay crop of good quality. Oats, Indian corn and millet are the principal forage crops and all are in good condition. Market-garden crops are in good condition, with yields and prices about normal. Apples will be a small crop; grapes a full crop; pears fair crop. Pastures are in fair condition, but high lands need rain. Rye, oats and barley are good crops, but are used for forage only. All crops on high land now show need of rain. Bees are not kept in this vicinity.

Avon (S. FRANK OLIVER). — Elm-leaf beetles are doing some damage. Very little corn is raised in this vicinity, but the crop in neighboring towns looks well and nearly all goes into the silo. The hay crop is not quite up to the standard, but was of good quality and well and cheaply secured. A small quantity of wheat and oats are grown as forage crops. Early peas and beans have done very well and brought good prices; potatoes look well. The fruit crop is rather small and has been injured by the San José scale and lice on apple trees. Pasturage holds pretty well considering the very dry spell. Oats and rye are extra good crops. Only now and then a hive of bees is to be noticed.

Stoughton (CHARLES F. CURTIS). — Potato bugs are causing the most trouble of any insect. Indian corn is very backward; 90 per cent of the crop goes into the silo. The hay crop is up to the average in quantity and of the very best quality. Japanese millet is raised with Hungarian grass for forage, and both are waiting for rain to germinate. The condition of all market-garden crops is very bad. Apples, pears and grapes look well. Pastures are all dried up and cows are being fed at the barn. Bees are kept in town and are on the increase, should say about 50 hives.

Norwood (F. A. FALES). — Potato bugs and squash bugs are doing some damage. Corn is about two weeks late; about the usual quantity is being raised for the silo and there is a 50 per cent increase in the acreage raised for grain. The hay crop was 75 per cent of the normal. Hungarian grass and Japanese millet were the principal forage crops. Market-garden crops are in good condition, but two weeks late;

average yield and good prices. There is a fair prospect for apples, peaches, quinces and grapes; many pear trees killed; too early to tell about cranberries. Pastures are getting dry. Rye, oats and barley are very good crops. Very few bees are kept here.

Walpole (EDWARD L. SHEPARD). — Gypsy moths, elm-leaf beetles and potato bugs are doing damage. Corn looks fairly well, but needs rain; about half the crop is raised for ensilage. The hay crop is a little below the normal in quantity, but of good quality. Corn and Hungarian grass are the principal forage crops and both are feeling the drought. Market-garden crops are below the normal. The crop of fruit will be small from the present outlook. Pastures are drying up. Rye, oats and barley are below the normal. Two parties keep bees to a small extent.

Franklin (C. M. ALLEN). — Indian corn looks finely; two-thirds the crop goes into the silo. The hay crop was seven-eighths of the normal and of fine quality. The dry weather has injured forage crops materially. The condition of market-garden crops is average and prices have been better than usual. Fruit is not up to the usual average in promise. Pasturage is very dry, but improving with the recent showers. Very few bees are kept here.

BRISTOL COUNTY.

Mansfield (WM. C. WINTER). — The elm-leaf beetle is perhaps the worst insect this spring, but is controlled now by spraying. Corn is late and owing to dry weather not any too promising; a very small proportion will be put in the silo. Hay is short, of a normal crop of excellent quality. Sweet corn and Hungarian grass are the principal forage crops grown and are not promising. The condition of market-garden crops is generally poor, prices about as usual. Apples, pears, peaches and plums a light crop; quinces and grapes a normal crop; cranberries uncertain. Pastures are in very poor condition. Rye, oats and barley are little grown but are about normal. Very little is done with bees, except by cucumber growers. Except for two light thunder showers there has been very little rain for a month.

Berkley (ROLLIN H. BABBITT). — Elm-leaf beetles and potato bugs are doing damage. Indian corn has been looking well, but needs rain; very little grown for the silo. The hay crop is above an average, both in quantity and quality. Corn fodder, oats and millet are the principal forage crops grown and are sadly in need of rain. Strawberries were abundant but prices were low; other small fruits a failure. There is not much fruit about here except grapes and cranberries, which promise well. Pasturage is drying up fast. Rye, oats and barley are about average crops. Our people are just beginning to keep bees.

Swansea (F. G. ARNOLD). — Elm-leaf beetles and potato bugs are doing damage. Corn is very backward, owing to dry weather; only three silos in town. A good crop of hay of extra quality was secured

without damage. Fodder corn and Japanese millet are the principal forage crops and are backward on account of drought. Cabbage is small; early potatoes died down prematurely; both selling for low prices. There is a very poor prospect for any kind of fruit. Pastures are very dry and some are feeding hay. Rye was good crop; oats a small crop. Very few bees are kept.

Dighton (HOWARD C. BRIGGS). — Elm-leaf beetles are doing damage. If we do not have rain within a week the corn crop will be a failure. A good crop of No. 1 hay was secured. There will be the usual amount of fodder corn and millet grown for forage. Market-garden crops have been very poor; prices average. There will not be an average crop of fruit. Pasturage is in poor condition. Rye, oats and barley are average crops. Very few bees are kept. No rain of any amount has fallen since the beginning of June.

Westport (ALBERT S. SHERMAN). — The San José scale is doing much damage. Indian corn is backward and suffering from lack of rain; no silos in this vicinity. There was not a heavy crop of hay, but it was of excellent quality. Market-garden crops and potatoes are looking well, but need rain. Corn and oats are raised extensively as forage crops. There is a very poor prospect for fruit of all kinds. Feed is quite plenty on low lands, but pasturage on high lands is dried up. There is a normal crop of rye, oats and barley, nothing extra. Formerly bees were kept quite extensively, but now they are seldom seen.

Aeushnet (M. S. DOUGLAS). — Potato bugs and elm-leaf beetles are doing damage. Indian corn is in very good condition; only two silos in town. The hay crop was not up to the normal in quantity, but was of fine quality. Early potatoes are turning out good; price normal. Apples are dropping badly; pears normal; peaches and plums fair; quinces scarce; grapes and cranberries fair. Pastures are very short on account of drought. Rye a fair crop; oats a failure; barley fairly good. Some bees are kept, but no large apiaries.

PLYMOUTH COUNTY.

Hanson (F. S. THOMAS, M.D.). — Elm-leaf beetles are doing some damage. Indian corn is in good condition; more than usual will be put into the silo. There is about an average hay crop in both quantity and quality. Corn, oats and rye are the principal forage crops grown. Market-garden crops are in good condition. The prospect was that there was to be a good fruit crop, but lice have damaged the crop very much. Rye, oats and barley are average crops. But few bees are kept.

Carver (J. A. VAUGHAN). — Elm-leaf beetles and plant lice are causing damage. The corn crop is in good condition; no silos in town. There was a good hay crop of average quality. A small acreage of

millet is grown as forage. There is prospect of only a small crop of fruit, except for cranberries. Pastures are drying up at this time. Rye, oats and barley are average crops. A few bees are kept. Cranberries have blossomed well and there is prospect of a large crop.

Rochester (GEO. H. RANDALL). — Cut worms, currant worms and potato bugs are doing damage. Indian corn is late and suffering from drought; perhaps one-fourth the crop will go into the silo. There is an average hay crop of good quality and secured in good condition. Fodder corn and millet are the forage crops grown. All market-garden crops are suffering for want of rain; potatoes are hardly worth digging. The prospect is very poor for fruits, except grapes and cranberries. Pasturage is almost all dried up. Rye is a good crop; oats and barley small. A few hives of bees are kept. Onions are ripening very small.

Wareham (A. B. SAVARY). — Very little damage is being done by insects. Corn is looking well; there are no silos in town. The hay crop is above average in quantity and quality. Some millet is grown for forage. Garden crops are drying up and unless there is rain soon they will be poor. The prospect is good for cranberries only of all fruits. Pasturage is poor, owing to lack of rain. Rye, oats and barley are little grown and only for forage. There are only a few hives of bees kept. No rain to amount to anything for two months, not even a thunder shower.

Norwell (HENRY A. TURNER). — Potato bugs and currant worms are doing damage. Corn is looking well; very few silos in this locality. The hay crop was about a normal yield of good quality. Oats are raised as a forage crop to some extent. Potatoes are looking well, but none have been harvested. The apple crop promises well; very few peaches; grapes promise a good crop. Pasturage is in very good condition. There is little rye, oats or barley raised. A very few bees are kept.

Marshfield (JOHN H. BOURNE). — Cut worms, potato beetles, squash bugs and currant worms are doing damage. Indian corn is in excellent condition; very small part of it goes into the silo. The hay crop was a little better than last year and of excellent quality. Oats and fodder corn are raised for forage crops and are well grown. The dry weather is cutting short market-garden crops, especially potatoes. Apples are a little short; pears good; peaches fair; grapes as usual; cranberries looking well now. Pasturage is drying off. Rye, oats and barley are about average crops. A good many colonies of bees are kept, one man having 100 hives.

Plympton (WINTHROP FILLEBROWN). — Potato bugs and squash bugs are the insects doing the most damage. Corn is looking well, though planted late. The hay crop was a little above the average. Corn, peas and oats and millet are the principal forage crops; millet

looks well. Gardens are feeling the effect of drought, crops already harvested good; prices as usual. All fruits are promising well. Pastures are beginning to dry up. All grains have done about as well as usual. Bees are kept only to a slight extent.

BARNSTABLE COUNTY.

Bourne (DAVID D. NYE). — Potato bugs, elm-leaf beetles and gypsy moths are doing damage. Indian corn was in good condition, but the present drought is wilting it; none raised for the silo. There was a full crop of hay of very good quality. Sweet corn is the principal forage crop. Market-garden crops are in very good condition; potatoes suffer seriously from dry weather. The prospect is fair for fruit; few apples; cranberries look fair; peaches, plums and quinces scarce. Pasturage has been very good, but dry weather has dried it up. Rye, oats and barley are not raised about here. No bees are kept in town.

Mashpee (W. F. HAMMOND). — Cranberry fire worms and cut worms are doing damage. Indian corn is looking well; none will be put into the silo. The hay crop was about average in quantity. Oats and fodder corn are the principal forage crops. Market-garden crops are about average in yield and price. Apples, pears and grapes are half crops; peaches, plums and quinces 25 per cent. Pasturage is above the average in condition. There will be average crops of rye and oats. Bees are kept here, but only a few hives.

Orleans (FREEMAN E. SNOW). — The cranberry worm is doing considerable damage. Corn is looking well; there are no silos. The hay crop has been a little better than usual this year, on account of more rain. Oats and millet are raised for forage and promise fairly well. Asparagus, except on new beds, has not done well; prices for market-garden crops good. The prospects indicate a small crop of fruit, generally speaking. Pastures are drying up. Rye, oats and barley are about average crops. A few bees are kept, but hardly enough to make account of.

Falmouth (D. R. WICKS). — Potato bugs and spanworms are doing damage. Indian corn is not quite up to the normal, but of good color and growing very fast. The hay crop is fully up to the normal in quantity and quality. Corn and millet are the principal forage crops and are in need of moisture. Potatoes are blighting and are not promising. Apples are a failure; pears 25 per cent; peaches half a crop; plums normal; quinces fair; cranberries good. Pastures begin to show the effects of drought. A few bees are kept, not as many as formerly.

Harwich (Mrs. S. M. DOANE). — Elm-leaf beetles and gypsy moth caterpillars are doing damage. Notwithstanding the drought corn is looking fairly well; very little put into the silo. The hay crop is rather above the average and of good quality. There will be the usual acreage of beets and turnips for stock food. Early potatoes are bringing good prices, but rather below the average in yield. The prospect for apples,

peaches and pears is poor; a fungus on the trees early in the season seemed to blight all fruit. Rye, oats and barley are good crops. Bees are not kept to any extent. The cranberry bogs are looking well.

Truro (JOHN B. DYER). — Plant lice and yellow squash bugs are doing damage, but are decreasing. Corn needs rain; no silos here. The hay crop was good. Some corn fodder is raised to help out dry pastures. Early potatoes suffered from dry weather on uplands; lowlands good. Apples do not promise well; pears, grapes and cranberries good. Pasturage is all dried up on uplands. Rye, oats and barley are fair crops. A few hives of bees are kept by perhaps half a dozen different owners in town.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Potato bugs are doing damage. Indian corn is rather backward and only a small proportion of it will be put into the silo. The hay crop is a good average in quantity and of fine quality. Corn is the principal forage crop grown and is backward. Dry weather is doing damage to garden crops and potatoes; prices high. The prospect is poor for fruit of all kinds. Pasturage is in poor condition. Rye, oats and barley are below average crops. Bees are not kept in our town.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

LIVE STOCK IN MASSACHUSETTS.

By J. A. FOORD, *Professor of Farm Administration, Massachusetts
Agricultural College.*

The history of agriculture in our own and other countries shows quite clearly that live-stock farming, carefully conducted, in connection with rotation of crops, is the simplest and easiest method of maintaining and increasing the fertility of the land, and thus insuring a gradually increasing production. The live-stock industry in Massachusetts is less important than it was ten years ago, and it may not be out of place to inquire whether or not this downward movement is a healthy and profitable one for the farmer, and, as well, how it may be checked.

DAIRY CATTLE.

Reliable statistics give the number of cattle in Massachusetts from 1890 to 1908 as follows:—

YEAR.	Cows.	Neat Cattle Other than Cows.	Total.
1890,	200,658	62,549	263,207
1900,	180,245	56,715	236,960
1901,	178,291	55,291	233,582
1902,	179,593	49,351	228,944
1903,	179,033	46,586	225,619
1904,	180,372	46,641	227,013
1905,	181,920	44,368	226,288
1906,	181,816	42,536	224,352
1907,	179,075	39,414	218,489
1908,	171,458	38,743	210,201

Not only is the total number of cattle slowly decreasing, but the proportion of "neat cattle other than cows," which was 23.7 per cent of the total number in 1890, dropped gradually until in 1907 it was only 18 per cent; it was 18.4 per cent in 1908. This is only another way of saying that Massachusetts farmers are raising fewer and fewer

of their own cows; attention has already been called to this tendency in the report of the Secretary of the State Board of Agriculture for 1908.

Many dairy farmers in Massachusetts are neglecting one of the most important branches of the business, that is, the breeding and improvement of dairy cattle. The milk producers, especially in the eastern and central part of the State, often buy their cows, and raise neither grain nor young stock, most of the cows going to the butcher as soon as they fail to give a profitable flow. The phrase "it is cheaper to buy than to raise" has often been used by farmers in the past without careful calculation, and undoubtedly to the benefit of the seller instead of the buyer. There are exceptions to all rules, but at the present prices of grain and cows, a question worthy of the most careful consideration is whether the Massachusetts dairy farm cannot with profit be made more self-sustaining.

The former who, instead of buying, raises a good deal of his own grain and most of his young stock, may not handle quite as much money and labor during the year, but will often show just as good *net* returns at the end of it. The net returns for a series of years will also be more likely to be in his favor. The plan of continually changing cows prevents taking advantage of the application of the rule that "like produces like," and the "grading up" of the herd becomes impossible except by chance purchases. Not only is the price of cows increasing, but good cows are difficult to obtain. The continual discarding of the offspring of the best producers for veal, or even at a younger age, must have a depressing influence upon the quality and productiveness of our cattle as a whole, and is a doubtful business practice. Even the regions from which the milk producers obtain their milking stock must either send to market only their lower grade cows, or else by sending their best animals deprive themselves of the possibility of a gradual improvement in each succeeding generation.

Disease, also, is very likely to be introduced where cows are purchased frequently and from many sources. Tuberculosis and contagious abortion are, perhaps, the troubles most likely to occur in a herd that is kept up by the constant purchasing of new animals. Each of these diseases is causing the dairymen of the State enormous losses every year, and will undoubtedly continue to do so until every one co-operates to stamp them out. Tuberculosis is a so-called "germ" disease, and the policy of "say nothing about it," and the practice of keeping slightly infected tuberculous animals in the herd, are both foolish and short-sighted. A herd with a clean bill of health will be more profitable to its owner in the long run than a diseased one, and the sooner the cattle owners of the State decide to keep only healthy herds, and adopt a policy of co-operation with each other and the State for the suppression of tuberculosis, the better it will be for the financial success of the dairy business as a whole.

Bovine tuberculosis may be diagnosed or detected, even in its early

stages, by means of the tuberculin test in the hands of a careful and competent man. Provided slightly infected animals are found, and their ability as producers makes it desirable, they may be separated from the main herd and kept for breeding purposes. They must be absolutely separated, both in the stable and out of it, from the main herd, the milk produced by these animals must be pasteurized by heat before being fed to calves, pigs or other animals, and care must be taken that calves do not suckle their dams at any time. The process of breeding a healthy herd from an infected one involves a good deal of care and detail, but it can be accomplished in a shorter time and at less expense than is usually supposed. The result is worth the effort. Mention should here be made of the fact that unscrupulous dealers have learned how to prevent the usual reaction of tuberculin, thus again placing the dairyman who buys his cows at a disadvantage. To the man who breeds his own stock, however, the test is just as valuable as ever, because he has them under his own control.

In the improvement or grading up of a herd of milch cows one of the first steps is to weigh and record the amount of milk produced each day. While this seems like quite an undertaking, when proper arrangements are provided the amount of time required is very small, and the returns from such work are such that the writer has yet to hear of a progressive dairyman who has discontinued the work after beginning it with proper utensils and arrangements. The influence upon the milkers, and the ease with which the owner or herdsman can detect a lessened flow as soon as it occurs, are worth the cost. Hanging spring balances, with adjustable hand that can be set back for the weight of the pail, may be obtained at any good hardware store. It is only necessary then to make the pails used by the different milkers weigh the same by the addition of a little solder on the bottom of the outside of the pail; the weight of milk can then be read directly from the scales.

The data thus obtained of the work actually done by the cows will contain some surprises but are the best criterion in judging of their value. Too much stress should not be put upon one year's work, but after the dairyman has weighed the milk from his herd for two or three years, a fairly correct estimate of the producing ability of the individual cows of the herd may be obtained.

To make the record complete, and especially if cream, or milk with a high per cent of fat, is desired, samples of the milk of each cow should be tested by the Babcock test. These samples may be obtained in several different ways: (1) by taking a small amount of milk from both a night and morning milking, and testing such a sample once or twice a month, or, better, once a week; (2) by taking a small amount (less than one-half ounce) of milk from each milking for a week. These samples may be kept from souring by the use of corrosive sublimate. This preservative may be obtained in small tablets ready for use from most dairy supply houses. As corrosive sublimate is a poison

the tablets contain some coloring matter, to guard against the accidental use of the milk. Samples should be kept out of reach of children and small animals, and if the composite samples are used they should be covered with a tight stopper, to prevent evaporation. Evaporation, by decreasing the amount of water, will slightly increase the per cent of fat. Eight-ounce round glass bottles, with ground-glass stoppers are excellent for keeping composite test samples; they are inexpensive and may be obtained from chemical supply houses. Lightning fruit jars are sometimes used for the same purpose. It is desirable to test at least one week in each month, and if a continual weekly composite test is made, it will, of course, be more accurate. Fairly good results can be obtained, however, if a carefully taken sample is tested once or twice a month. A hand machine and glassware for making the Babcock test may be obtained for less than \$10, and its operation is not difficult, although care in the manipulation of the test is demanded if accurate results are desired.

The scales and the Babcock test are the factors that should carry the most weight in judging our dairy herds. Function, not form, is or should be the chief consideration. What can the animal do? is much more important to the practical dairyman than whether the form, the color or the tilt of the horns conforms to the requirements of a breed score card. These requirements are often desirable and add to the value of an animal, but it should always be kept in mind that performance is the main thing. Prof. Eugene Davenport, whose opinion and advice on the subject of animal breeding deserves the most careful consideration, writes as follows in Vol. III. of the "Cyclopædia of American Agriculture," recently published:—

Form is striking because it appeals directly to the eye, but it has been greatly overemphasized, not only as the direct object of breeding but also as an index of quality, for all studies yet made indicate that the correlation between form and function is in most cases far less than was hitherto supposed. The individual as a whole has occupied too much attention in the mind of the breeder. The single character is the real object of thought and selection in all successful breeding operations; it is the real unit of study in all problems of heredity, and the actual basis of operation in all cases of variability. The individual is but a single instance of the many patterns that may be cast out of the various characters that belong to the race, and he is not to be taken too seriously. The dominant characters of the race and their correlations, — this is the great question in all the problems of the breeder and in all efforts at further improvement.

Another early step in the improvement of any herd or flock, and a step that should be taken at once by many New England breeders, is the purchase of a pure-bred sire from record-making ancestry. It is an old saying that the sire is half the herd. Few dairymen can afford all pure-bred females, at least in starting a herd, but none should be without a pure-bred bull, whose near ancestors show marked excellence along the lines it is desired to breed for. The use of such an animal

with those females that show the best results when judged by the scales and the Babcock test, as just described, and the raising of the heifer calves, will lay the foundations of a herd that, while capable of continual improvement, the owner need not be ashamed of. Such a course of action will, it is believed, in many cases prove safer and more profitable in the long run than purchasing cows and keeping them only one or two milking periods before sending them to the butcher.

BEEF CATTLE.

The lack of suitable abattoirs in the small towns of New England is a drawback to the raising of beef in this section, but those farmers who are located at some distance from the railroad and on cheap land might well consider the advisability of keeping a beef or dual-purpose breed. The dairyman of England, farming on high-priced land, keep many Shorthorn cattle, and although the milking habit of the Shorthorn as a breed in America has been allowed to degenerate, some milking strains remain, and could undoubtedly be improved and kept with profit on some farms.

The increase in the number of working oxen in several New England towns during the last two or three years is worthy of notice. Oxen can never take the place of horses as in the early days, but the farmer who has more work than one team can do, and not enough for two teams, will find a yoke of oxen an inexpensive help. They are less costly than horses, and in case of accident, lack of work or a rising market can be sold for beef. The difficulty in obtaining men who understand driving and handling them is perhaps the chief objection to their use.

HORSES.

There is a good demand in the cities of the State for heavy draft horses, and those weighing 1,400 pounds or over nearly always command a good price. The horses to supply this demand come from Ohio and the States to the west of it. There is no good reason why these horses should not be raised in Massachusetts. Our soil and climate are well adapted to raising horses of good quality and strong bone, and a heavier horse could be used with advantage on New England farms. It is time that we recognized in New England more fully than we do the advent of modern farm machinery, and the need of preparing for it and making plans for its profitable use by clearing out stone walls, underdraining wet places and doing away with fences wherever possible. When this is done we shall see that a man can just as easily direct a team weighing 3,000 pounds as one weighing 2,000, and that the former will be the more economical per unit of work done. The labor problem, as all farmers know, is still awaiting solution, and this is but a suggestion. The following quotation is from an article by M. W. Harper, in a recent number of the "Cornell Countryman," and is worthy of repetition:—

The heavy horse can be produced with less effort and less risk to mare and foal. The brood mare should be worked up to the time of foaling; it is better for her. The heavy mare is more phlegmatic, not so apt to injure herself or the colt while in foal, as is the lighter and higher strung mare. Again, when the colts are young, they are not so active, not so apt to hurt themselves, as are the lighter and higher strung animals. And even if they should blemish themselves, while very objectionable, yet it is not so much so as it would be with the lighter horses. Draft colts can be made to earn their own keep from the time they are two years old, when they can be put to light work. They are not so hard to train as the lighter ones, as they are more phlegmatic and take to their work better. If one is raising coach or saddle horses it may cost more to properly educate them than the entire cost of the draft colt.

The heavier horses are always in good demand on the market. They are least affected by business depressions, by fads and fancies. If one is breeding coach or saddle horses, they are usually considered pleasure animals, and the first to be affected by business depressions. Again, the draft horse will be the least affected by the motor car. Whatever else may be said, the motor car has come to stay, and as there are about seventy thousand automobile licenses in New York State alone, we can hardly gainsay that it has affected the number of pleasure horses to some extent.

If it is true, as seems to be the case, that the larger the horse the larger the farm machinery, then it is true that more work will be accomplished per man, and hence less human effort will be expended per acre. This will decrease the cost of production and increase the net returns per acre, therefore the value of the land is increased. Furthermore, if it is true that the draft horse is the more economically raised, the least affected by business depressions, and worth the most when ready for market, it would seem well worth while to give him greater recognition in the east than has hitherto been accorded him.

The Percheron horse is probably the best of the heavy breeds for New England markets and conditions. The Percherons have strong, fine bone, good spirit and action, and the weight that is necessary to haul heavy loads on smooth city streets. Although originally gray in color they have been bred and selected for a darker type, until black is as often found as gray.

If those interested in draft horses in any neighborhood would combine their forces for the purchase of a Percheron or other good draft stallion, the improvement in the stock would soon be noted, and before long money that is now sent out of the State for horses might be paid to Massachusetts farmers.

SHEEP.

There are thousands of acres in Massachusetts that are well adapted to the raising of sheep. It might almost be said, better adapted to sheep than any other stock or crop. There is a home market for mutton and winter lambs, and they can be raised at a profit. It would, however, be foolish at the present time to advocate sheep husbandry in Massachusetts, to give a description of the most desirable breed or suggestions as to their care. The dog to-day is a privileged character, and not until he is put under the same conditions of restraint as the other domestic animals can sheep farming be safely carried on as a profit. Dogs should be confined to the land or property of their owners, and either held in restraint or muzzled when they leave it.

We require this for all other animals, why not for the dog? Not even our children are allowed as much liberty as the worthless curs that make sheep farming in Massachusetts impossible. The remedy is not a difficult one or hard to find, and with a little co-operation the time should not be far distant when the law will make impossible the half-starved, half-cared-for, half-wild mongrels that threaten our inhabitants and the other domestic animals with the possibility of hydrophobia, and prevent the pursuit of a profitable industry by many of our citizens. Kindness itself would put such dogs under the turf.

SERIES OF 1909.

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Vol. 22. No. 4.

MASSACHUSETTS CROP REPORT

FOR THE

MONTH OF AUGUST, 1909.

WESTERN METHODS IN NEW ENGLAND ORCHARDING.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, Secretary.

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
UNDER ACT OF CONGRESS OF JUNE 6, 1900.

BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1909.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

CROP REPORT FOR THE MONTH OF AUGUST, 1909.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Sept. 1, 1909.

Bulletin No. 4, Crop Report for the month of August, is herewith presented. In this number will be found an article contrasting eastern and western methods of growing and handling apples, entitled "Western methods in New England orcharding," by Prof. F. C. Sears, professor of pomology at the Massachusetts Agricultural College. There is no question that New England apples excel those from the west in flavor, at least not on the part of those who have tried them from both sections, knowing which were western fruit and which the home-grown article. On the other hand, the western growers have succeeded in putting out a product which is very attractive to the eye; and the apples which we see offered at retail for 10 cents apiece and similar prices are usually western fruit. How to meet our western rivals on their own ground is the subject of this article, and in it Professor Sears tells, from an extended experience and study, what we must do to meet this competition and win back the better market of the east to our own apples.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture (Crop Reporter for August, 1909) estimates, from the reports of the correspondents and agents of the Bureau, that the average condition of corn on August 1 was 84.4, as compared with 89.3 a month earlier, 82.5 on Aug. 1, 1908, and 82.6, the average on August 1 for the past ten years.

Preliminary returns indicate a winter wheat yield of about 15.5 bushels per acre, or a total of about 432,920,000 bushels, as compared with 14.4 and 437,908,000 bushels, respectively,

as finally estimated last year. The average quality of the crop was 90.3, as against 90.1 last year. The average condition of spring wheat on August 1 was 91.6, as compared with 92.7 a month earlier, 80.7 on Aug. 1, 1908, and 81.1, the ten-year average on August 1.

The average condition of the oats crop on August 1 was 85.5, as compared with 88.3 a month earlier, 76.8 on Aug. 1, 1908, and 83.1, the ten-year average on August 1. The proportion of last year's oats crop in farmers' hands on August 1 was about 3.3 per cent, or 25,323,000 bushels, as compared with 5 per cent, 38,000,000 bushels, last year, and 6.3 per cent, 53,000,000 bushels, the average proportion for the past ten years.

The average condition of barley on August 1 was 85.4, as compared with 90.2 last month, 83.1 on Aug. 1, 1908, 84.5 in 1907, and 86.1, the ten-year average on August 1.

The average condition of rye on August 1, or at harvest, was 89.1, as compared with 91.4 a month earlier, 88.3 on Aug. 1, 1908, 88.9 in 1907, and 87.9, the ten-year average at time of harvest.

The acreage of buckwheat is about 801,000 acres, or .1 per cent (2,000 acres) less than last year. The condition of the crop on August 1 was 86.3, as compared with 89.4 last year, 91.9 two years ago, and 91.7, the ten-year average on August 1.

The average condition of white potatoes on August 1 was 85.8, as compared with 93 last month, 82.9 on Aug. 1, 1908, 88.5 in 1907, and 86.7, the ten-year average on August 1.

The average condition of tobacco on August 1 was 83.4, as compared with 89.8 a month earlier, 85.8 on Aug. 1, 1908, 82.8 in 1907, and 82.3, the ten-year average on August 1.

The average condition of flax on August 1 was 92.7, as compared with 95.1 a month earlier, 86.1 on Aug. 1, 1908, 91.9 in 1907, and 87.7, the average on August 1 for six years.

The preliminary estimate of the acreage of hay is 45,581,000 acres, or 1.9 per cent (905,000 acres) less than last year. The average condition of the hay crop on August 1 was 86.8, as compared with 87.8 a month earlier, 92.1

on Aug. 1, 1908, and a ten-year average on August 1 of approximately 87.

In Massachusetts the average condition of corn was 88; the average condition of oats, 71; the average condition of barley, 93; the average condition of rye, 93; the average condition of buckwheat, 93; the average condition of hay, 86; the average condition of timothy, 87; the average condition of clover hay, 79; the average condition of pastures, 75; the average condition of tobacco, 85; the average condition of potatoes, 85; the average condition of apples, 60; the average condition of peaches, 70; the average condition of grapes, 88; the average condition of pears, 68; the average condition of tomatoes, 88; the average condition of cabbages, 92; the average condition of onions, 85; the average condition of watermelons, 79; the average condition of cantaloupes, 86; the average condition of Canadian peas, 87; the production of blackberries, compared with a full crop, 88; the production of raspberries, compared with a full crop, 85; the average condition of beans, 87; the average condition of Lima beans, 90.

TEMPERATURE AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM UNITED STATES NATIONAL WEEKLY WEATHER BULLETIN.]

Week ending August 9. — The week was uniformly warm in the great interior valleys, the temperature increasing somewhat as the week advanced, until near the close it was decidedly above normal, especially from the Mississippi valley eastward. The weather was generally cool in the districts west of the Rocky Mountains, with daily deficiencies from 3° to 6° in northerly portions. Over the eastern portions of the Great Plains and in the middle and upper Mississippi valley, Lake region and northern New England the mean temperature ranged from 4° to 7° above the normal. The precipitation during the week occurred mostly in the form of showers, occurring at widely scattered points and at irregular intervals. From Oklahoma northeastward over the middle Mississippi valley, Lake region, Ohio valley and the interior of the North Atlantic States from Maryland to New England the precipitation was very light, except at a

few points where local heavy showers occurred, no rain whatever occurring in numerous large areas.

Week ending August 16. — The warm weather prevailing the previous week over the districts east of the Mississippi River gave way during the early part of the week to cooler conditions, causing comparatively cool weather during nearly the entire week over these sections. Warm weather continued over the Great Plains region. Continued cool weather was again the rule over the Plateau and Pacific coast districts. The week was generally cooler than the average over the Atlantic coast districts from the Carolinas northward, deficiencies ranging from 2° to 4° . The rainfall consisted generally of local showers until near the close, when a shallow depression moved from the upper Mississippi valley eastward to the middle Atlantic coast, accompanied by general and in some cases heavy rains over these districts. Only small amounts of rain occurred over the eastern portion of the middle Atlantic States from Maryland northward, and portions of southern New England were without rain. From the Mississippi valley westward to the Pacific the weather was generally clear.

Week ending August 23. — The week opened with a further continuance of cool weather over the more eastern districts, comparatively cool weather for the season continuing for the entire week over the upper Ohio valley, Appalachian regions and to the eastward. The warm wave over the interior valleys and Great Plains increased in intensity, culminating about the 17th and 18th in a hot wave of marked intensity, the day temperatures being higher than previously reported at that period of the month in many years. The warm wave was dissipated towards the end of the week, and moderate weather prevailed in all districts east of the Rocky Mountains. Rainfall was fairly general, and at some points excessive in amount, along the immediate Atlantic coast from Florida to New England during portions of the first two days of the week, the fall in New York for the twenty-four hours ending at 8 A.M., August 17, being over 5 inches. A rainfall of nearly 3.5 inches was reported from Yuma, Ariz., on the same date, — a remarkable fall for that

locality. Aside from the above-noted rains, such precipitation as occurred was confined generally to light local showers; and over the greater portion of the interior districts there was no rain of consequence.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending August 9. — New England. Boston: Very little rain fell in Maine during the week, but in the remainder of the section there were copious showers the latter part of the week, giving amounts generally above normal, and temporarily relieving the drought. However, more rain is generally much needed. The temperature averaged somewhat below normal, but the week closed very warm. Sunshine was above average.

Week ending August 16. — New England. Boston: Light showers occurred in the early part of the week in northern Maine; otherwise very little or no rain occurred. It is generally very dry, and rain is greatly needed. Temperature and sunshine were slightly below normal.

Week ending August 23. — New England. Boston: General and copious rains during the week were of great benefit in relieving the drought. The temperature was somewhat below normal, with some cool nights. Sunshine was below average.

THE WEATHER OF AUGUST, 1909.

Fair and generally clear weather prevailed at the beginning of the month, followed on the 4th, 5th and 6th by generally cloudy weather and rain. The rainfall during this period was between .80 and .90 of an inch over the greater part of the State, except in the southeastern portion, where it was somewhat less. Although the rain did not break the drought, it was of considerable benefit in temporarily relieving it. From the 7th until the 15th fair and generally clear weather prevailed, with an increasing need of rain. The 16th, 17th and 18th were generally cloudy, with a copious and much-needed rainfall, amounting to about 2 inches in all parts of the State. This rain, although much

less than the amount needed to make up the deficiency, relieved the drought for the time being. After the 18th fair and generally clear weather prevailed during the greater part of the remainder of the month. The temperature during the month was generally below the average. During the first week the day temperatures were generally below 80° . The 8th and 9th were warm, with temperatures near and somewhat above 90° . From the 10th to the 18th the temperature was moderate and somewhat below the normal. The 19th and 20th were warmer and somewhat above normal. Generally normal temperature prevailed during the next four days, followed by warmer weather during the remainder of the month, with maximum temperature above 90° on several days. The month as a whole was not so warm as usual, and deficient in precipitation during a large part of the period.

In our circular to correspondents, returnable August 23, the following questions were asked:—

1. What is the condition of Indian corn?
2. What is the prospect for rowen, as compared with a normal crop?
3. What is the prospect for late potatoes, and have you noticed blight or rot?
4. How do the acreage and condition of tobacco compare with former years?
5. What is the prospect for apples, pears, peaches, grapes, quinces and cranberries?
6. What is the condition of pasturage in your vicinity?
7. How have oats and barley compared with former years?
8. What is the condition of celery and other late market-garden crops?

Returns were received from 134 correspondents, from which the following summary has been made up:—

INDIAN CORN.

In general the corn crop was in a rather curious condition, promising an excellent yield if it should mature, but about two weeks behind the normal for development at this time

of year, and consequently in a position to be ruined by an early frost. The stover is generally good, though not unusually luxuriant, and the crop well eared, but the most forward ears were in the milk instead of on the point of glazing, as they would be in an ordinary season. The crop is reported as having come forward very rapidly since the rain of the 16th and 17th, and is probably generally past danger from drought, though some fields on light land have been permanently injured from that cause. In southeastern sections the crop does not show as good promise as elsewhere, the drought there having been more severe and prolonged. Ensilage corn was also backward and in many cases had not yet eared to any extent, and for that reason is likely to be less valuable than usual. Much depends on the weather of early September.

ROWEN.

There are very few sections where there will be any rowen this year, except on fertile new-seeded fields. The cutting of the first crop was succeeded by several weeks of fierce drought, putting the possibility of any second crop on ordinary fields out of the question, and perhaps in some instances injuring the grass roots as well. The heavy rains of the third week of the month came too late to make much difference in the prospects for rowen, but must have done grass roots a great deal of good.

LATE POTATOES.

Very few late potatoes had been dug at the time of making returns, but the outlook did not appear to be especially good. The drought must have had a considerable effect on the size and number of the tubers, especially in eastern and southeastern sections. Altogether, the prospect is for considerably less than a normal crop. What the effect of the rains will be remains to be seen, but they came too late in many sections. There is no rot reported, and not much blight; but, in view of the somewhat backward condition of the crop, it is a question whether the fact that any was reported is not sufficiently alarming, and more or less of an indication that this will be a year of blight.

TOBACCO.

The acreage of tobacco shows a slight but general decrease, according to correspondents in the tobacco sections. Reports of condition are almost all of them favorable, and some correspondents regard the crop as one of the very best ever secured. Cutting had begun in some sections at time of making returns, and the bulk of the crop will be secured by the first of September.

PASTURAGE.

Pastures suffered severely from the drought, and in many sections there was practically no feed prior to the rains of the 16th and 17th. Some correspondents report that dairy-men have been obliged to feed hay at the barn, and very few report the feed as other than short or dry. The rains will of course make some improvement, but the season of the year is past when we can expect a recovery that will make a great deal of feed for this season, so that those dairymen who have not prepared a supply of green feed are likely to find themselves pushed for hay before the winter is over. The rains should, however, have prevented permanent damage to the grass roots.

FRUITS.

Apples will be an even lighter crop than was anticipated, the drop having been particularly severe, and in many cases the drought having so affected the trees that the apples will be undersized. Pears seem likely to be a better crop than was previously indicated, but not one of particularly great yield. Peaches are generally a light crop. Quinces are seldom reported on, but seem to be a fair crop. Grapes promise very well indeed if they escape damage from early frosts. Cranberries will be small in some cases, but, generally speaking, a good crop is now expected in the region of commercial production.

OATS AND BARLEY.

Oats are reported as short, but heading out fairly well, perhaps a three-fourths crop, taking the State as a whole. Barley is little raised except for late forage, and does not seem to be in particularly good condition for that purpose, but may come forward better in the future.

LATE MARKET-GARDEN CROPS.

Celery is rather backward, owing to the severe drought, which interfered with setting, and in some cases materially reduced both the number of acres set out and the number of plants that bore transplanting. With warm weather and seasonal rains, the crop should overcome this handicap to a considerable extent. Other late market-garden crops, notably cabbages and root crops, are also rather backward, but since the rains are improving and quite generally promise well.

NOTES OF CORRESPONDENTS.

(Returned to us August 23.)

BERKSHIRE COUNTY.

Alford (LESTER T. OSBORNE). — Indian corn is rather below the average in condition. Dry weather has shortened rowen so little will be harvested in this section. There is no blight or rot on potatoes, but it is thought there will not be an average crop. The outlook for apples has improved, and there may be a three-fourths crop. Pasturage is improving rapidly since the heavy rains, and is in average condition. Oats and barley are a little above the average. New seedling shows the best catch for years.

Tyringham (EDWARD H. SLATER). — Indian corn is quite backward, but will be a fair crop. Rowen will be a light crop. Potatoes are looking well, with the exception of some fields which have been affected by blight. Very little tobacco is raised in this vicinity. The apple crop will hardly be up to the average. Pasturage is in very poor condition. Oats have turned out well. Market-garden crops are not raised to any extent.

Becket (WM. H. SNOW). — Indian corn is very late and small. Dry weather will make rowen very late, but it is doing well now. The season has been too dry for late potatoes; some blight, but no rot as yet. There will be a very light crop of apples; pears quite plenty. Pasturage is very short, on account of dry weather. Oats and barley are very short as to grain, but well headed out. Celery and other late market-garden crops are little raised.

Richmond (TIMOTHY B. SALMON). — Indian corn is in average condition. Rowen is not quite up to the average in condition. The prospect for late potatoes is good, but they show some blight. There will be a small crop of apples; pears good; no peaches; few grapes, quinces or cranberries. Pastures are in good condition. There is a heavy crop of oats, but damaged by rain after cutting; barley small crop. No celery is grown here; other market-garden crops good.

Peru (F. G. CREAMER). — Corn is in fair condition, the late rains being very beneficial. Very little rowen will be cut. The prospect for late potatoes is good, and there is no blight as yet. The prospect for apples is fair. Pastures look well. The prospect is for a full crop of oats and barley, as both look well.

Hinsdale (THOS. F. BARKER). — Corn is very late, and there will be less than a normal crop. Rowen is less than half a crop. Late potatoes are a fair crop of small tubers; have noticed neither blight nor rot. There will not be over half a crop of fruit. The late rain is helping feed in pastures. Oats are a good crop; very little barley raised. Celery is not raised; beets and carrots promise well. The drought has hurt every crop to a great extent, and we can hardly tell as yet how much value the rain will be to us.

Hancock (B. H. GOODRICH). — Corn is late, and it looks as if little of it could mature unless frosts hold off until very late. The rowen crop will be very much below normal. Late potatoes generally promise well; some blight, but no rot. Apples are very uneven, early ones small; pears good; grapes heavy crop. Pasturage is in poor condition. Notwithstanding the rust, oats are turning out well; barley not grown. The hay crop was secured very late, and a little is still unharvested. Rains have relieved the crops somewhat.

Cheshire (L. J. NORTHUP). — Indian corn has made rapid growth of late, but needs much more warm weather. There will not be much if any rowen cut in this vicinity. The prospect for late potatoes appears to be very satisfactory. Apples are not plenty; pears quite plenty; some peaches; grapes look well. Pastures have dried up beyond recovery for this year. Oats and barley are 75 per cent of a normal yield. Celery is a little late, but other garden crops are about normal. There is no blight on potatoes as yet, but some scab.

Williamstown (S. A. HICKOX). — Corn has made good progress since the rains, and shows a good stand, but is two weeks late. Late potatoes are doing finely. Rowen will be three-fourths of a normal crop. Apples are three-fourths of a crop; pears 50; no peaches; grapes 50. Pastures have improved since the rain. Oats and barley are a little more than half crops. Celery and other late market-garden crops are in fair condition.

FRANKLIN COUNTY.

Charlemont (J. M. J. LEGATE). — Corn is not as forward as usual, but has improved greatly in the past month, and promises a good crop if we do not have an early frost. There will be practically no rowen except on rich, new-seeded fields. Late potatoes show a good growth of vines; few dug as yet; no blight or rot at present. Fruits of all kinds promise rather light crops; wild blackberries improved by the rain, but not average yield. Pasturage was very poor, but is improving since the rains. Oats short of stalk, but seem to be well headed; barley grown only for late forage, and very little for that. Cabbage is the only late market-garden crop grown, and looks well, though backward. All crops are later than usual.

Conway (L. T. HOPKINS). — Indian corn is late, but good, and most of it will ripen all right. There will be very little rowen, though the recent rains will probably bring some late. The prospect for late

potatoes is good, but the acreage is small; have noticed neither blight nor rot. The acreage of tobacco is slightly decreased, and the dry weather has injured early fields. Apples, peaches and quinces light; pears fair; grape vines loaded with fruit. Pastures are pretty dry, with little feed. Oats and barley are little raised. Celery and other late market-garden crops are not grown. The recent rain is causing the early apples to fall before ripening.

Gill (F. F. STROUGHTON). — Indian corn is generally very good, but some fields are late. Rowen has been poor, but is improving since the rain. There will be a very light crop of apples; grapes good. The drought injured pasture feed, but it is looking better now. Oats are a good crop. No celery raised; garden crops good. There will be good crops of berries.

Deerfield (DWIGHT A. HAWKES). — Corn promises to be a full average yield. The prospect for rowen is very poor, and there will probably be less than half a crop. There is very little blight on late potatoes, and the prospect for the crop is good. There is a normal acreage of tobacco, and the yield will be 85 per cent of a full crop. Apples are a poor crop; grapes fair. Pasturage is very short. There is no barley grown here; oats not up to the normal. Celery and other late market-garden crops are very little grown.

Whately (C. L. CRAFTS). — Corn is mostly good, but some fields were badly affected by dry weather. The drought following the cutting of the first crop of hay has spoiled the chances for rowen. Late potatoes will be a good crop; have noticed neither blight nor rot. Tobacco harvesting is well under way, and by September 1 the bulk of the crop will be secured. The acreage is a little less than usual, but the crop is the best in years, the recent heavy rain being just what was needed to finish it out. There will be plenty of pears, but other fruits are light. Pasturage has been very dry, but is now improving. Oats are generally cut green for fodder. Celery and other late market-garden crops are in fair condition, but are little grown.

Sunderland (GEO. P. SMITH). — Indian corn is in good condition, but needs a warm September to mature the grain. Rowen has improved since the rain, and there will be a fair amount. Late potatoes show some blight, but promise a fair crop. The acreage of tobacco is from 5 to 10 per cent less than last year; an average growth, with some fine crops. There will be few apples or pears; grapes more plenty. Pastures are in normal condition, and feed is growing well. Celery is late, but is doing well; cabbage in good condition. Onions are maturing rapidly, and will be more than an average crop of No. 1 quality; very little blight or thrip this year.

Montague (A. M. LYMAN). — Indian corn is in very fair condition since the rain, and promises a good crop. Clover shows a good second crop; other rowen not half a crop. Late potatoes are in good condition, with neither blight nor rot. The acreage of tobacco is decreased,

but the crop shows a good growth of fine quality. There will be pretty light yields on all fruits. Feed in pastures is quite short, but is now improving. Oats and barley are good average crops, more satisfactory than usual. Celery and other late market-garden crops promise to come out extra well. Grapes are showing black rot.

Wendell (N. D. PLUMB). — Corn is above the normal in condition, but two weeks later than usual. There will be less than half a crop of rowen, on account of drought. There is an average crop of late potatoes promised; have noticed neither blight nor rot. Apples, pears and peaches are about three-fourths crops. The recent rains have greatly improved pasturage. Oats and barley are average crops. Late market-garden crops are not raised for market.

Erving (CHARLES F. CLARK). — Indian corn is not in the best condition. The prospect is for less than an average crop of rowen. Late potatoes promise fairly well, without blight or rot as yet. There are few apples; pears a medium crop; grapes plenty. Pastures are in rather poor condition. Oats and barley are about average crops. Celery and other late market-garden crops are in fair condition.

HAMPSHIRE COUNTY.

Greenwich (WALTER H. GLAZIER). — Indian corn will be later than usual, but is looking finely. The prospects for rowen are not very good at present. Late potatoes are looking fairly well, but show a little blight. Very little fruit is grown here. Feed in pastures is mostly dried up. Oats and barley are not grown for grain. A fair crop of hay was secured, in good condition. Corn has eared out well.

Prescott (W. F. WENDERMUTH). — Indian corn is in good condition. There will probably not be more than half a crop of rowen. Late potatoes are looking well, with very little blight or rot. Apples are the only fruit grown for market, and there will be a short crop. Oats and barley are average crops. Pasturage is badly dried up. Celery and other late market-garden crops are not grown here. The disease known as blackleg has appeared in two herds of cattle in town, and seven heifers have died.

Belchertown (H. C. WEST). — Corn is in the best condition for years. There will be very little rowen. The prospect for late potatoes is fair; have noticed little or no blight. Apples will be half a crop or less; some pears; peaches good; grapes fair. Pasturage is short. Oats and barley are fully up to average crops. Celery and other late market-garden crops are in good condition. The late rains have made a great improvement in all crops, but pastures and mowings have gone past for the season.

Hadley (L. W. WEST). — Corn promises 90 per cent of a full crop, and most fields are looking well. Rowen is not over half a crop. The prospect for late potatoes is fair; have noticed neither blight nor rot. The acreage and condition of tobacco are both normal. Apples are

90 per cent of a full crop; pears 50; peaches few; grapes good. Pasturage is short, but was helped by the rains of the 16th and 17th. Oats are a three-fourths crop; barley not grown. Celery and other late market-garden crops are in good condition.

South Hadley (W. F. PERSON). — Corn is looking well, and will be an average crop. There will not be any rowen this year to amount to anything. Potatoes will be a light crop, with no blight or rot as yet. The apple crop is light, and of poor quality. Pastures look well, considering the drought. Oats are a small growth, but well headed and yield well. Celery looks well, also other late market-garden crops. Since the rain of the 16th everything looks brighter, and grass has started up and looks well.

Southampton (C. B. LYMAN). — Indian corn is looking fairly well, the recent rains having greatly improved it. There will be a very small crop of rowen. Late potatoes have been much improved by the rain; some blight, but no rot as yet. The acreage of tobacco is decreased, but it is in good condition. Apples are a light crop; peaches good; pears and grapes plenty. Pasturage is very poor. Oats and barley were mostly cut for hay.

Westhampton (LEVI BURT). — Corn is very backward, and little of the crop will ripen unless frosts hold off until late. Rowen will be half a crop, the recent heavy rains having started it up. Late potatoes are in excellent condition; no blight or rot as yet. There will not be over half a crop of apples; few pears, peaches and quinces. Pasturage is very short. Oats and barley are not raised. Market-garden crops are grown only for home use.

Williamsburg (F. C. RICHARDS). — Indian corn is a little late, but is looking well, and promises a good crop. Rowen is about a failure, except on moist land. A good yield of late potatoes is promised; have noticed neither blight nor rot, but there seems to be a great deal of damage by white grubs. The acreage of tobacco is about the same as usual, and the crop is backward in growth. Apples are about 55 per cent of a full crop; pears 30; peaches 80; grapes a full crop. The recent drought affected pastures severely. Oats and barley are good average crops.

Middlefield (J. T. BRYAN). — Corn is very backward, and will require a late season to ripen. There will be less than half a crop of rowen, owing to dry weather. The crop of late potatoes will be a fair one, though a few fields show blight. Fruits will be less than average crops. Pastures have been very short, owing to drought, but recent rains have improved them. Oats and barley were good crops, but all have been cut for fodder. Celery and other late market-garden crops are in good condition.

HAMPDEN COUNTY.

Chester (C. Z. INZELL). — Corn is looking well, but is about two weeks late. There will not be much rowen cut about here. There will be a light crop of potatoes, but no blight or rot has appeared as yet. Apples, pears, peaches and quinces are light crops. Pasturage is short at present.

Blandford (ENOS W. BOISE). — Indian corn is late, with a good stand, but will require a warm September to ripen the grain. Fall feed and rowen are light, the latter not over 75 per cent. Potatoes promise a good yield of good quality, but none have been dug as yet. Apples and pears promise normal yields. Pasturage is in poor condition. Oats and barley are about normal crops. Celery and other late market-garden crops are in average condition.

Russell (E. D. PARKS). — Corn is in very good condition, and if there are no early frosts will be an average crop. The prospect for rowen is not up to the normal. There is some blight on potatoes, but they look very well, rather above the average. All fruit looks well; apples half a crop. Pasturage is in about the usual condition for August. Oats and barley are about average crops. Celery and other late market-garden crops are not raised for market.

West Springfield (N. T. SMITH). — There is a good growth of fodder, and corn is earing about normal; but the crop is ten days late, and is not coming forward rapidly, owing to cool nights. There will be little rowen unless plenty of rain brings out a late crop. Early potatoes are nearly a failure; later ones promise a fair crop; no blight on late fields. The acreage of tobacco is less than usual, and the condition variable. Apples and pears are short crops; peaches and grapes good. Pasturage was badly scorched by drought, but is improving since the rains. Oats and barley are about normal crops, and mostly cut for fodder. Celery is looking well, and gives good promise; turnips and other late crops normal.

Chicopee (E. L. SHAW). — Indian corn is generally in good condition. Some fields will give a good yield of rowen, but most fields will give nothing. There is no blight or rot on potatoes as yet. Apples are a fair crop; pears few; peaches good; grapes plenty. Pastures have been too dry, but are picking up some now. Oats are very short; no barley raised for grain. Celery is backward, on account of dry weather; garden crops are coming on well now.

East Longmeadow (JOHN L. DAVIS). — Corn does not show a good set of ears, and the color of the stover is too light. There is not much rowen to be seen, nothing except a little clover. Potatoes promise a very light crop; some blight, but no rot as yet. Apples are mostly a failure; some pears, peaches and grapes. Pasturage is very short, but the rains will help it. Oats are very light; no barley raised. There is not much celery raised; sweet corn is small; root crops should

do well. Quite a number of farmers are raising cabbage for feed for milch cows when the grass is gone.

Wilbraham (H. M. BLISS). — Corn is 90 per cent of a full crop. There will be a light crop of rowen. Late potatoes promise a three-fourths crop. Tobacco is a full crop in acreage and condition. Apples are 65 per cent of a full crop; pears 50; peaches 95; grapes 95. Pasturage is in poor condition. Celery promises fairly well, as do late market-garden crops in general. Oats and barley were three-fourths of normal yields.

Monson (F. D. ROGERS). — Indian corn has made a good growth, and promises well. The prospect for rowen is very poor. Late potatoes are looking well; a few fields show a little blight, but no rot. Apples and pears are light crops; peaches and plums good. Pastures are poor, but are improving since the rains. Celery and other late market-garden crops are little grown.

Palmer (O. P. ALLEN). — Indian corn has been retarded by drought, but has been somewhat improved by recent rains. Rowen is not very promising. Late potatoes can be saved only by frequent rains in the immediate future. Fruit of all kinds is rather below the average in quantity. Pasturage has suffered greatly from the drought. Oats and barley are not up to average crops. There is no celery raised here; other market-garden crops are in fairly good condition.

WORCESTER COUNTY.

Brookfield (FRANK E. PROUTY). — Indian corn is in good condition, considering the dry weather of July and the first part of August. Hardly any rowen will be cut here. The drought has hurt late potatoes some, and some fields are blighted. Apples are not half a crop. Pasturage was badly injured by the dry weather. Oats rusted somewhat, but are an average crop. Celery and other late market-garden crops are late, on account of the dry weather. Pears are not more than half a crop; grapes good; quinces and cranberries little raised.

North Brookfield (JOHN H. LANE). — Indian corn is good, but late. There will be no rowen and many grass roots seem to be dead. Potatoes are probably not much over 25 per cent of a normal crop. Apples 25 per cent of normal crop; pears 15 per cent; grapes 50 per cent. Pastures are very dry, and are eaten close in favorable spots. Oats are probably 80 per cent of a normal crop. The drought was very severe until the recent rain.

West Brookfield (MYRON A. RICHARDSON). — Indian corn is coming forward rapidly, and if warm weather continues there will be a good crop. Rowen is a total failure on most fields. There is no blight or rot on potatoes as yet, but the drought has injured them considerably. There will be more than a normal crop of apples, but the fruit is small, on account of drought. Pasturage is all dried up, and cattle have been fed from barns, but recent rains have brightened the pastures

considerably. Oats are a good crop where smut or the drought have not been too severe; barley is a good crop, but short.

New Braintree (CHARLES D. SAGE). — Corn is very backward, the season having been a poor one for this crop thus far. The prospect for rowen is poor unless we have abundant rains. Have not noticed blight on potatoes; very few dug as yet. Apples are 40 per cent of a normal crop; pears 35 per cent; peaches 40 per cent; grapes 80 per cent. Pastures have suffered badly from drought. Oats and barley are about three-fourths crops. Late market-garden crops are not grown for market in this town. Milk is very short, and farmers must have better prices or many will go out of the business.

Barre (JOHN L. SMITH). — Indian corn is a little late and uneven, but is growing fast since the rain. There will be no rowen. Potato vines are looking finely where they have been sprayed; unsprayed fields have begun to blight. There will be a light crop of all fruits. There is no feed in the pastures. Oats are about a two-thirds crop.

Dana (LYMAN RANDALL). — The drought has injured the corn crop, making it very uneven. Rowen will not be over half a normal crop. The prospect for late potatoes is good, with no blight or rot so far. The apple crop will be very small and of poor quality; other fruits a fair crop. Pastures are very short, owing to the severe drought, but weather conditions are favorable for them now. Oats and barley are average crops. There is not much celery planted; late garden crops are looking fairly well, and the weather is favorable for them now.

Templeton (LUCIEN GOVE). — Indian corn is very uneven, and most of it is from one to two weeks late. The prospect for rowen is very poor, as the rains came too late. The present prospect for late potatoes is very good; have noticed neither blight nor rot. Apples are a light crop, the fruit being small and poor in quality; pears good; no peaches or grapes. Pastures are in very poor condition. Oats are a light crop, but barley is quite good. Celery is not raised; other market-garden crops in only fair condition. The prolonged drought seriously injured fields and pastures, and retarded the growth of all cultivated crops.

Ashburnham (E. D. GIBSON). — Indian corn is two weeks late, but is growing finely since the recent rain of $1\frac{3}{4}$ inches. There will be no rowen to speak of. Potato vines look well on some fields, while others have been ruined by drought. Apples are half a crop; pears few; peaches poor; grapes good. Feed in pastures is very short, drought and grasshoppers having about ruined it for this year. Oats and barley are average crops. Celery and other late market-garden crops are very little raised.

Fitchburg (DR. JABEZ FISHER). — Corn looks well, but is late. Until the rain of the 17th the prospect was that there would be no rowen. No blight has appeared on potatoes as yet. Apples are not over 25 per cent of a normal crop; pears 25, but both of good quality; grapes 100. Pasturage is very short, because of drought.

Shrewsbury (FRED J. REED). — Indian corn is very backward, on account of dry weather. The prospect for rowen is very poor. Late potatoes look fairly well, with no blight or rot. Apples, pears and peaches are very light crops; grapes fair. Pastures are all dried up. Oats and barley are very light crops, and have blighted to some extent. Celery and late market-garden crops will be improved by the recent rains. This has been a very poor year with me.

Leicester (H. H. KINGSBURY). — The success of the corn crop now depends on temperature, it being of good color in silk and tassel. The prospect is that there will be about half a normal crop of rowen. Late potatoes are in fine condition, without blight or rot. Apples and pears are about 75 per cent of a full crop; grapes 90; quinces 80. The recent rain has improved pasturage very much. Early sown oats and barley gave a good yield for fodder. Late market-garden crops, chiefly root crops, were not much injured by drought, and will respond readily to the changed conditions.

Auburn (WM. GILBERT). — The dry weather has hurt the corn crop; the rain came just in time to save it, but it will be light. There will be no rowen, and grass fields are all dried up. Potatoes are about normal, with some blight. Apples and pears are light crops; grapes about normal. Pastures are all dried up. Oats and barley are both light crops.

Mendon (J. J. NUTTER). — The prospect for Indian corn is better since the rain. The prospect is poor for rowen. Late potatoes are looking very well, but early fields have blighted. There will not be as good a crop of fruit as usual. Pasturage is in poor condition. Oats and barley are not raised hereabouts. Celery and other late market-garden crops are in very good condition.

Blackstone (O. F. FULLER). — Corn looks well where not permanently injured by drought. The prospect for rowen is good. I have noticed blight on late potatoes, but have not heard of rot. There will be few apples, pears or peaches. Pasturage is very short, but late rains may help to start the grass. Oats and barley are not much raised for grain, mostly for fodder. There is no celery grown here for market, just a little for home use.

MIDDLESEX COUNTY.

Hopkinton (W. V. THOMPSON). — Indian corn looks finely, but is about three weeks behind the normal in development. There is no prospect of any rowen as yet. Late potatoes promise a light crop; no blight or rot as yet. Apples light; pears fair; few peaches; grapes a full crop. Pastures are very dry. Oats and barley are very light crops. Celery and other late market-garden crops are not much raised. The recent rain saved the corn crop, for it had about reached its limit without moisture.

Marlborough (E. D. HOWE). — Indian corn promises three-fourths of a normal crop. There will be practically no rowen. The potato

crop has been shortened by drought. Apples are 40 per cent of a full crop; pears, peaches and grapes 50; quinces 40. There is no feed in the pastures. Oats and barley are three-fourths crops. Celery and other late market-garden crops are not grown to any extent.

Maynard (L. H. MAYNARD). — Indian corn is in very good condition, the recent rains having helped the crop. Rowen will be good on some fields, but many will be light. Late potatoes promise a good crop; no blight or rot as yet. Apples will be about half a crop; other fruits about normal, with grapes abundant. Pasturage is short, owing to the scant rainfall. Oats and barley have been average crops. Celery and all market-garden crops are looking well at this writing, recent rains having helped them wonderfully.

Littleton (GEO. W. SANDERSON). — Corn is more than an average crop, and is looking well. There will be a little more than a normal crop of rowen. Potato vines show some blight, but no rot has been noticed. The prospect for the fruit crop is not as good as early indications led us to expect; apples have dropped a great deal. Pasturage is better than last year, but not of the best. Oats and barley compare favorably with former years. There is a fair crop of pears but very few peaches.

Dunstable (A. J. GILSON). — Indian corn is very much below the normal in condition. Very little if any rowen will be cut. Late potatoes promise a medium crop; no blight has been noticed. Apples, pears, peaches and quinces are very scarce; grapes and cranberries medium crops. Pasturage is very dry and short, nothing for cattle to eat except brush. Oats and barley are raised only for fodder, and compare favorably with former years for that purpose. There is no market gardening in this locality worth mentioning.

Westford (J. W. FLETCHER). — Corn is in good condition, the recent rain being just what was needed. The prospect for late potatoes is good, and there is no blight or rot as yet. There will be about 85 per cent of a normal yield of fruit. Pasturage has been pretty dry. Oats and barley are not raised except for fodder.

Billerica (E. F. DICKINSON). — Indian corn is in good condition on moist ground. There will be two-thirds of a normal yield of rowen. There will be a medium crop of late potatoes, with no blight or rot as yet. Pasturage is in fair condition, except on light ground. Apples half a crop; pears one-fourth; peaches one-third. All crops are from a week to ten days late this season. My Crosby sweet corn has averaged to give the first picking August 1; this year it was August 11. Locally, we have not suffered as much from drought as most sections.

Tewksbury (G. E. CROSBY). — There is plenty of good sweet corn, but very little Indian corn grown; what there is looks well. Rowen promises to be only a light crop. Potato vines begin to look rusty. There will be a small crop of fruit here. Pastures are in poor condition. There will be a good crop of early sown oats and barley. Celery is

particularly good; other late market-garden crops fair. Conveniences for handling crops by electric roads would be helpful, and should be provided.

Concord (WM. H. HUNT). — Corn promises pretty well, but some fields suffered from drought. Rowen will be below the average on most fields. The prospect for late potatoes will be fair, and there is little blight. Apples are a light crop; pears fair; other fruits average. Pasturage has fared badly, especially on light soil. Oats and barley are little below average crops. Celery is looking well, and other late crops have a fair chance. We have lately had abundant rain, but before that we had such severe drought that hay, potatoes, corn and such crops suffered severely on light soil.

Lincoln (C. S. WHEELER). — Indian corn is in fair condition. The prospect for rowen is poor. There is no blight or rot on potatoes as yet; crop late, but should do well since the rain. Grapes are a good crop; other fruits poor. Pastures have been parched, but the recent rains will improve them. Oats and barley are raised only for fodder, and were below average for that purpose. Celery and other late market-garden crops are in fair condition.

Winchester (S. S. SYMMES). — Indian corn is not raised here. The prospect is for a light crop of rowen, the rains coming too late. Potatoes look well, with no blight or rot. There will be light crops of apples and pears; peaches a heavy crop. Pastures are just recovering from the long drought. Celery is very small, but is growing well now. Many thousand celery plants were killed by the hot weather. Rains came so late in August that many cabbage plants were not set. The heat and drought hurt the fruits, sweet corn and nearly all crops.

ESSEX COUNTY.

Amesbury (F. W. SARGENT). — Corn is backward, but is now making rapid gain since the rains came. Not much rowen will be cut, owing to drought. There is no blight as yet on late potatoes, and the prospect is better since the rain. There will not be over 15 per cent of a normal crop of apples; other fruits normal; no cranberries grown. Pastures are very short. Oats and barley are not raised except for fodder, and were light crops for that purpose. Celery and other late market-garden crops are in fair condition; many things have been almost a failure; winter cabbage slim, especially transplanted ones.

Groveland (A. S. LONGFELLOW). — Indian corn promises a good crop. The rowen crop is the smallest for years. Late potatoes have been improved by the recent rains; no rot as yet. There will be light crops of fruit of all kinds. There is very little feed in pastures. Cabbages are in poor condition, because of drought.

Rowley (D. H. O'BRIEN). — Indian corn is in very good condition. Rowen will be about 35 per cent of a normal crop. The prospect seems to be for a light crop of potatoes, and they are blighted badly.

There will be a heavy yield of grapes; apples, pears, peaches and cranberries light. Pasturage is in poor condition. Oats and barley are below average yields. Celery and other late market-garden crops are rather backward. Heavy winds have damaged corn.

Topsfield (B. P. PIKE). — Corn is late, and the crop will not be as heavy as usual, on account of drought. There will be practically no rowen. The prospect for late potatoes is fair; have noticed neither blight nor rot. There will be about 25 per cent of a normal yield of apples; few pears or peaches; some grapes and cranberries. The condition of pastures is as bad as it can be. Oats and barley were all cut for hay, and were not as good as usual. Celery and other late market-garden crops are below average in condition.

Hamilton (GEO. R. DODGE). — The condition of corn is about normal, except on high ground, where it suffered from drought. Rowen will be a short crop, scarcely 50 per cent of the normal. Late potatoes on moist ground are still growing, and no blight is reported as yet. Apples are about 25 per cent. of a normal crop; pears 50; peaches 50; grapes 75. Upland pastures are dried up, but lowland pastures hold out well. Oats and barley are not raised except for forage. Celery is not grown; late cabbage and turnips backward, but coming forward since the rain.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES). — Indian corn is not raised here. There will be very little rowen. There will be a fair crop of potatoes; have noticed neither blight nor rot. There will be a fair yield of fruits. Pastures are in poor condition. Oats and barley are not raised. Celery and other late market-garden crops are in good condition at present. The season has been very dry, and some crops have been entirely ruined; late crops promise well with rain.

Randolph (RUFUS A. THAYER). — Indian corn was badly injured by drought, and will be about half a crop. There will be no rowen except on low, rich land. Potatoes are very small, and not half a crop; have noticed neither blight nor rot as yet. Apples are half a crop; pears fair crop; grapes good. Pastures are very dry. Oats and barley are all used for forage crops, and are good only on low land. Celery, turnips and cabbage promise fairly well; tomatoes are a poor crop. The severe drought has nearly ruined all garden crops on high land; some fields of sweet corn will not pay half the cost of fertilizer and labor.

Stoughton (CHARLES F. CURTIS). — Indian corn is only about one-third of a normal crop in forage, with no ears, owing to the drought. Rowen never started, and will be a failure. Late potatoes will do well; early fields blighted. Apples and pears are 80 per cent of a full crop; peaches 50; grapes 100; cranberries 90. Pasturage is all burned up, as we had no rain, not even thunder showers, for a long time previous to this week. Oats and barley are only one-third crops. This is the

worst year for over twenty years; no rain for months, and wells are dry.

Norwood (F. A. FALES). — There will be a light crop of Indian corn, owing to dry weather. There will not be more than 25 per cent of a normal crop of rowen. The late potato crop will be light; some blight is showing, but no rot so far. There will be a light yield of all fruits; cranberries are looking well. Most pastures are very dry, and there is very little feed. Oats for green feed have been a good crop; barley was sown late, but is looking well. The dry weather has been bad for late garden crops. A light yield of cabbage is expected.

Walpole (EDWARD L. SHEPARD). — Corn is late, and the prospect is for a light crop. There will be a very light crop of rowen. No blight has been noticed on potatoes, but the crop will be light. Fruit of all kinds is below the normal in yield. Pasturage is all gone for this season. Oats and barley are a little below the normal. Celery and other late market-garden crops are badly affected by the drought.

Norfolk (A. D. TOWNE). — There will be about two-thirds of a crop of corn. Rowen will be about half a crop. Late potatoes look well; have noticed neither blight nor rot. Apples and pears will be light crops; peaches and grapes good; cranberries good. Pasturage is in poor condition. Oats and barley are rather poor crops. A hail storm August 20 completely ruined all crops in some sections of the town, — the worst storm we have ever known.

Millis (E. F. RICHARDSON). — Drought has injured the corn crop one-third. There will not be over 10 per cent of a normal crop of rowen. No blight or rot has been noticed on potatoes as yet. The crop of fruit will be very light. Pastures are all dried up. Oats and barley are about average crops. Drought has retarded the growth of celery and other late market-garden crops.

BRISTOL COUNTY.

Mansfield (WM. C. WINTER). — Indian corn is rather late, and will be a light crop. The indications are that there will be no rowen. Late potatoes are looking fairly well, with no blight reported as yet. Apples and pears are light crops; peaches very light; grapes and quinces good. Pasturage is in very poor condition at present. Oats and barley are about normal crops, but little grown. Celery and other late market-garden crops are mostly backward and in poor condition. The long continued dry weather has been very injurious to all crops, and the recent rains came too late for many of them.

Attleborough (ISAAC ALGER). — Dry weather has cut the corn crop very much. There will be no rowen. There is no blight or rot on late potatoes, but they will not be a good crop. Grapes are a fair crop, and cranberries medium. Pastures are very short. Oats and barley are not average crops. Celery and other late market-garden crops are in fair condition. The recent heavy rains will help some crops. Apples are small, and have dropped much; no pears to speak of.

Seekonk (JOHN W. PECK). — Corn is little grown except for the silo, and is in poor condition. Rowen is nearly burned up on high mowing lands, and not over half a crop on low lands. Late potatoes are not nearly up to the average; have noticed neither blight nor rot. Apples poor; pears fair; grapes good; peaches and quinces poor. Pasturage is very poor, and many dairymen are feeding hay. Oats are a good crop; barley mostly grown for feed, and will make good crop with rains. Celery is very small and late, except where freely watered. The drought has been the worst the oldest inhabitant remembers. Prices have been very good for all crops.

Dighton (HOWARD C. BRIGGS). — Indian corn is in very poor condition. There will be about 10 per cent of a normal crop of rowen. Late potatoes will give a very small yield; no rot as yet. Grapes and cranberries are good; other fruits poor. Pastures are in very poor condition. Oats and barley are not up to the average. All late market-garden crops are in bad condition. The first rain of any account since the beginning of June fell on August 17.

Swansea (F. G. ARNOLD). — Indian corn is very poor, few fields having ears; crop about 40 per cent of the normal. There will be no rowen. There is no blight or rot on late potatoes, but the rains came too late to save them. There will be few apples and pears; grapes plenty; no cranberries. The severe drought has left no grass in pastures, and farmers are feeding hay and corn fodder. There will be about two-thirds yields of oats and barley. There is very little celery set, except where irrigated; turnips a failure. The rain of this week is the first for seven weeks, but will help cabbage, pastures and forage crops.

Acushnet (M. S. DOUGLAS). — Indian corn is a normal crop. There is not 25 per cent of a normal yield of rowen in prospect. Late potatoes look green; have noticed neither blight nor rot. Apples are dropping badly; pears fair; few peaches; grapes good. Pastures are in very poor condition. Oats and barley are almost a failure. Celery has not got a good start, on account of dry weather, and all other late market-garden crops are the same. Fall apples matured early and brought good prices, but late apples are small and will be very scarce.

PLYMOUTH COUNTY.

Brockton (DAVIS COPELAND). — Indian corn is good on moist land, but a great deal dried up on high land. Rowen is very poor except on moist land. I have not noticed blight or rot on potatoes. There will not be many apples; some pears and grapes. Pasturage is very short, owing to dry weather. Oats and barley are not raised for grain. Celery and garden crops do not look very promising, but may do better now that we have had rain.

Norwell (HENRY A. TURNER). — Indian corn is looking well, though a little late. At present it looks as if the rowen crop would be light. Few late potatoes have been dug; have noticed neither blight nor rot.

Apples and peaches will give only light crops; grapes a good crop. Pasturage is very short, owing to drought. Oats and barley are little raised in this section. Gardens are looking well, although some have suffered from the dry weather.

Marshfield (JOHN H. BOURNE). — The late rain has greatly improved the condition of corn, and the prospect is for an average crop. Rowen is in very poor condition; the late rains may help on rich soils, but will hardly give an average crop. There is every appearance of a poor potato crop. Apples are poor; pears good; peaches few; grapes very good; cranberries good. Pasturage is in very poor condition. Oats and barley are less than average crops. If the season is wet and warm, celery and late market-garden crops, which now look doubtful, may do well.

Hanson (FLAVEL S. THOMAS, M.D.). — Corn is in rather poor condition, on account of drought. The prospect for rowen is very poor. There is no blight or rot on late potatoes, but the prospect for the crop is poor. The prospect is poor for all kinds of fruit. Pasturage is in poor condition. Oats and barley are but little raised. Celery and other late market-garden crops are in poor condition. The drought has made the prospect for all crops poor; early crops fair; later crops may brighten, now that we have had rain.

Carver (J. A. VAUGHAN). — The prospect for rowen is good. There is no blight or rot on potatoes as yet. There will be an average crop of apples and pears. Pasturage is dried up. Oats and barley are average crops. Celery and other late market-garden crops are but little raised. Until Tuesday, August 17, no rain had fallen for a long time, and all crops have suffered. Cranberries blossomed very full, but some were very late, and on parts of some bogs they did not set well, but on the whole there is prospect of a good crop.

Lakeville (NATHANIEL G. STAPLES). — Indian corn is not up to the average in condition. There will be practically no second crop of hay. There is not much blight on late potatoes, and there may be a three-fourths crop. Pears and grapes are average crops. Pastures are very dry, and there is no feed at all. Oats and barley are not more than three-fourths crops. Celery and other late market-garden crops are in fair condition. The rain of the 18th was the first of any account we have had since the 1st of June.

Mattapoisett (E. C. STETSON). — Many fields of corn look well, while others look poorly. The prospect is very poor for rowen. Late potatoes are in good condition; have noticed neither blight nor rot. Apples are rather poor; pears quite good; peaches good; grapes and cranberries good. Pastures are very dry and poor. Oats and barley are about average crops. Celery and other late market-garden crops are in fair condition.

BARNSTABLE COUNTY.

Bourne (DAVID D. NYE). — Indian corn is looking very well. Rowen looks rather doubtful, the dry weather having injured it. Late potatoes are not very good; have seen neither blight nor rot. There is a fair prospect for all kinds of fruit. Pasturage has been very poor, and is well dried up, though the late rains may help it. Oats are little raised except for feed, and no barley. Celery and late market-garden crops are rather below last year in condition.

Falmouth (D. R. WICKS). — Corn has suffered from the drought, but the recent rain may help it. The prospect for rowen is very poor at present. Potatoes are a poor crop, both early and late; no blight or rot. Apples are a failure; pears half a crop; peaches, grapes and quinces half crops; cranberries promise a good yield. Pasturage is all burned up, but is likely to start up with the good rain we have recently had. Oats and barley are very little grown, if at all. The prospect for late market-garden crops is poor at this writing, but may improve. The cold spring and early summer, followed by the drought, caused all kinds of vegetation to suffer severely, as plant roots were on the top of the ground in the early season.

Dennis (JOSHUA CROWELL). — Corn has suffered from drought, but with seasonal weather will recover; now at 75 per cent of normal. Rowen will be a very light crop. Potatoes are not much over half an average crop. Apples and pears are a small crop; cranberries about average. Pastures are in poor condition. The season was very dry until the 18th; a good rain on that date, but more is needed for the pastures. A local hail storm damaged cranberries somewhat on the 13th.

Brewster (THOMAS D. SEARS). — Corn is in good condition. The prospect for rowen is very poor. Late potatoes are looking fairly well; have noticed neither blight nor rot. The prospect for all fruits is good. On account of the dry weather, pasturage is very poor. Oats and barley are very little raised. Late market-garden crops are in fair condition.

Chatham (E. Z. RYDER). — Indian corn is looking as well as could be expected, considering the light rainfall. Rowen will be a very small crop. Potatoes will be a very small crop; have noticed neither blight nor rot. All fruits will give very light yields. Pasturage is in poor condition. No oats or barley were planted. All late crops are a failure. The long-continued drought has nearly ruined all vegetation. The cranberry crop will be small, with berries small and of poor quality. Onions, beets and cucumbers have withstood the drought better than any other crops.

Eastham (J. A. CLARK). — Indian corn is backward. The prospect for rowen is poor. There is some improvement in potatoes since the rain, and no blight has appeared. Apples are a small crop; pears fair;

cranberries promise well. Pastures are in poor condition. Oats and barley are little raised. Celery and other late market-garden crops are in poor condition. All crops were badly hit by the drought, but late ones will improve, now that we have had rain.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Indian corn is backward, owing to dry weather. The prospect for rowen is poor. There is a poor prospect for late potatoes; have not noticed blight or rot. The prospect is poor for all fruits except cranberries. Pasturage is in poor condition. Oats and barley are below average crops. The dry weather has injured all crops and ruined a great many.

NANTUCKET COUNTY.

Nantucket (H. G. WORTH). — The drought has injured corn very much. There will be but very little rowen. The prospect for late potatoes is fair; have noticed neither blight nor rot. The prospect for cranberries is good, the Burgess Cranberry Company expecting to harvest between three and four thousand barrels from their new bog; no other fruit grown. Drought has injured the pastures, except on very low ground. Oats are all cut green for fodder. Market-gardens look well, considering the dry weather. Eggs are scarce, and selling for 50 cents a dozen.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

WESTERN METHODS IN NEW ENGLAND ORCHARDING.

By F. C. SEARS, *Professor of Pomology, Massachusetts Agricultural College.*

Even the most casual observer, if he gives the subject any consideration whatever, must be impressed with the fact that eastern fruit has been almost entirely crowded out of the better class of our eastern markets. It still commands a part of the second and third and fourth class markets, where worm-holes and bruises and apple scab are not considered insurmountable objections to an apple; but who ever sees a sign displayed these days in any high-class fruit store, "Choice Massachusetts Apples" (or Connecticut or Vermont or Maine apples)? There are honorable exceptions, of course, to this exclusion of our eastern fruit, men who care for their orchards and who pack their fruit carefully and skillfully, and whose fruit commands the highest market price. But these men have personally overcome the prejudice which exists in the minds of most consumers against our eastern apples. The vast majority of New England orchardists, however, send their fruit to the general market and take what is left after the several "middlemen" have received their share, and little enough it is, as a rule.

All this is discouraging to any one who is interested in eastern orcharding, and who would like to see the industry take its place where it belongs, as one of the leading branches of farming in New England, and as the equal, if not the superior, of orcharding anywhere in the country.

The situation would be far *more* discouraging were it not for the few cases alluded to above, where men are already making the orchard business a splendid success here in New England; and were there not certain factors which warrant one in believing that we have only to take hold of the industry in a business-like way to make it the equal of orcharding in any other section.

Let us briefly review the situation in the western apple section, and see what factors have contributed to their success. To begin with, their orchards are most of them young, many of them right in their

prime and others just coming into bearing, so that the fruit which they are producing there at present is the very best that many of these orchards will ever produce. I do not believe that the importance of this factor is half appreciated by our New England orchardists, who are trying to compete against this class of fruit with fruit from orchards long past their prime. Until we get orchards on a par with the west as to age, we shall not be competing with them on anything like an equal footing.

In the second place, the orchard business is a great industry with them. Whole districts do little else than grow apples, and with this immense capital at stake, and with every man in the section talking and thinking and even dreaming of nothing but apples, the industry is bound to forge ahead. This is a well-recognized principle in *any* industry, yet one which we have systematically neglected here in New England. If Denmark had had only a handful of men scattered over the country who were engaged in dairying, it would never have become the leading dairy country of the world. And if we are to put the orchard industry of New England on a satisfactory footing, one of the first steps that must be taken is to get more people engaged in it. I have repeatedly urged the importance of this, for I believe that too much stress cannot be laid on it.

The third factor which has certainly contributed to the success of the western fruit is the fertility question. Their lands are new, virgin soils, full of all the elements of plant food, and the fruit grown on them has all the raw materials at its disposal which it can possibly use at any stage of its development. We here in New England are growing the fruit which we expect to compete with it on lands which are many of them already worn out with constant cropping, and which are in addition too often forced to grow two crops every year, — a crop of fruit and a crop of hay.

The fourth factor in their success is spraying. It is a business proposition with them, and they never neglect it. One hears of orchards which are sprayed five, six, seven or even more times in a season; and experimental spraying at the Oregon Agricultural College has shown that 99 per cent of their apples can be kept free from worms or fungous diseases, and many of their orchardists are approaching very close to this in actual practice by proper spraying. With us in New England the orchard which is sprayed at all is the exception; and usually one, or at most two, sprayings are all that even these orchards receive.

A fifth element of their success is certainly cultivation. It is thorough and continuous, so that all the power of the soil goes to making fine foliage and fine fruit, instead of being divided up among weeds, grass and fruit trees, as is too often the case with us.

The sixth factor in the conquest of our markets by western fruit, and the one which more than all others has given them the inside track, is, in the writer's opinion, their method of handling and grading



Fig. 1.—Boxes of western apples. Two-two diagonal pack on Spitzenbergs and three-three off-set pack on Grimes Golden. This is the kind of packing we must do, to compete with the west.

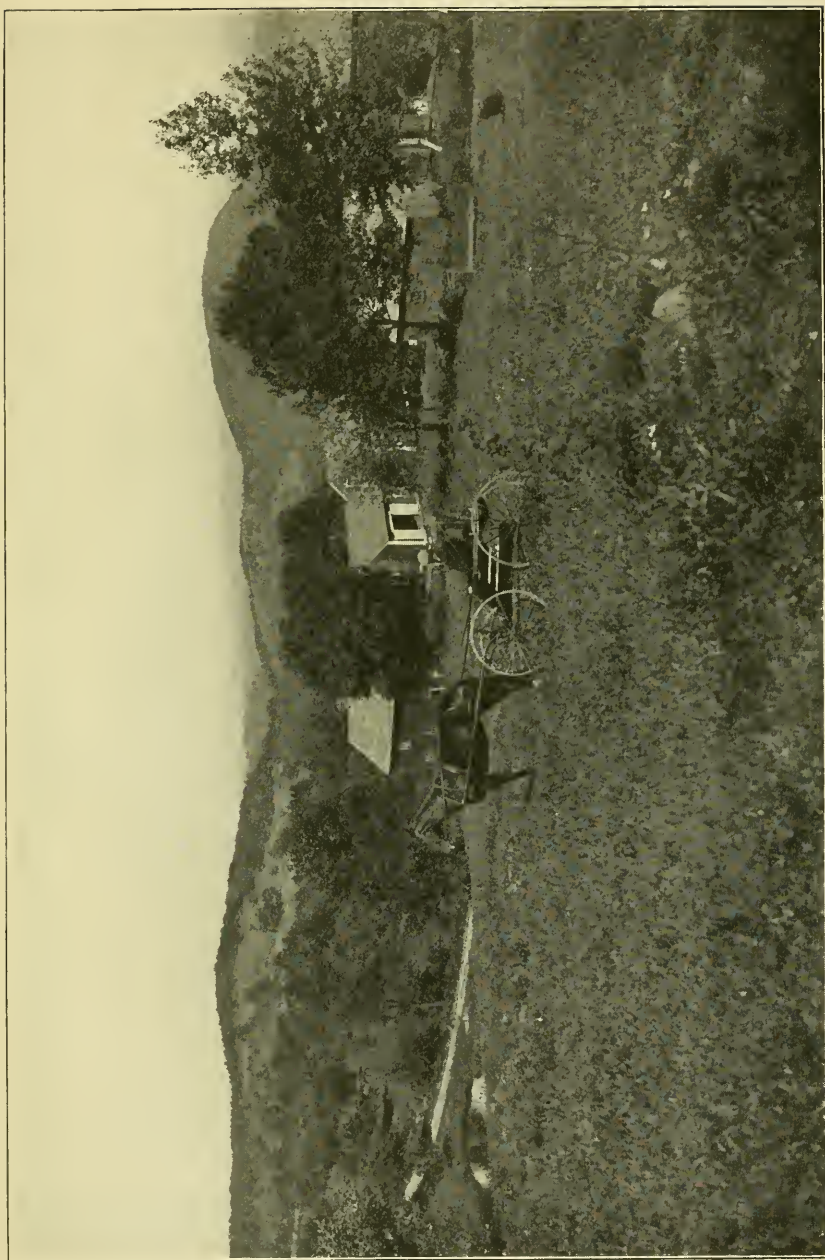


Fig. 2. — Good New England apple country. There are thousands of acres like this to be had at from \$10 to \$50 per acre.

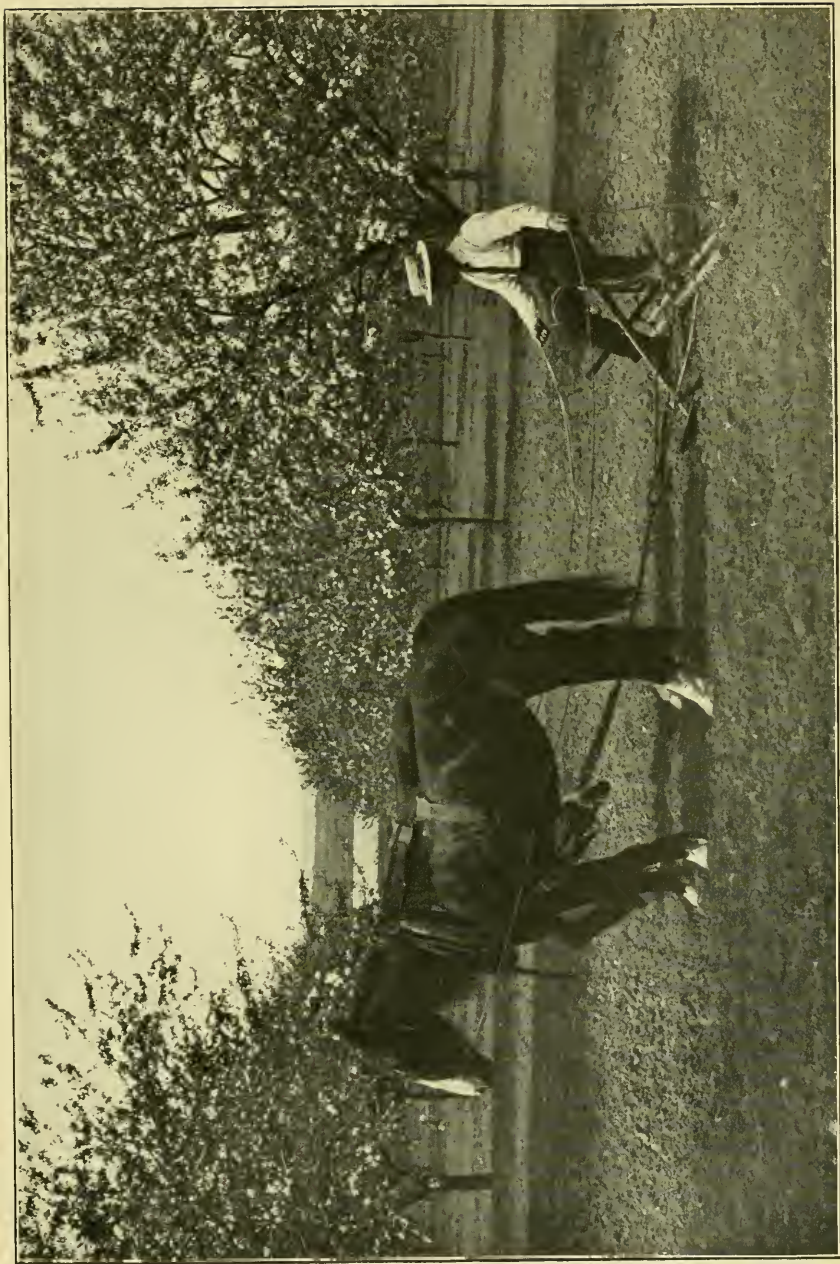


Fig. 3.—Clean culture in the orchard. Notice the tug-less harness, which prevents injury to the trees; also, that the soil is kept like a garden.

and packing their fruit after it is grown. Even with our faulty methods of growing fruit, we produce a lot of fine apples, but nine-tenths of them are not marketed so as to command the highest price which their quality would warrant; while with the western grower the grading and packing is such as to insure the apples reaching the consumer in perfect condition. Not only is every apple perfect, or practically so, — the few blemished ones which they produce being discarded, — but they are graded so that all the apples in each box are exactly alike. Fig. 1 shows two boxes of western apples, — a box of Spitzenbergs, from A. I. Mason, Hood River, Ore.; and a box of Grimes' Golden, packed by Stirling & Pitcairn, Kelowna, B. C., which the writer had shipped to Amherst for use in his classes in pomology. And though these boxes came clear across the continent alone, by express, thus receiving much rougher handling than they would if shipped in car lots, as is usual, yet so perfect was the packing and so careful had been the previous handling of the apples that they arrived with practically every apple in perfect condition; and the apples in the middle of the boxes and in the bottom were just as good as those on the top. This is certainly the key to western success in getting gilt-edged prices for their fruit. "A dozen Oregon Spitzenbergs," or "a box of Colorado Winesaps," has a definite meaning, just as much so as "a dozen California navel oranges," and customers are willing to pay for this certainty of getting something which is good.

The seventh and last factor in the success which I shall mention — though there are doubtless a few other minor ones which might be included — is their climate. I believe that the dry, sunny weather, which most of their famous apple sections have, puts a color and a "finish" on their fruit which it is difficult to get here in the east. Mind, I don't say that it *can't* be done here, but certainly it is *n't* very often, even in the few well-cared-for orchards which we can boast. That, it seems to me, is the only factor in the situation which need disturb the man who wants to go into orcharding here in New England; and, as I shall try to show, this is more than offset by advantages which we have.

Let us turn now to the situation here in New England, and see what factors there may be to encourage the prospective orchardist to select New England as his field of operations. In the first place, land values are very much in favor of New England. Men have been "going west to grow up with the country" for so long that prices for land in any of the good fruit sections are abnormally high, while they are correspondingly low here in the east. One hears constantly of the wonderful prices which are paid out there for raw lands, or for land just set to orchard, while \$1,000, \$2,000 and even \$5,000 per acre have been refused for bearing orchards. Here in New England, on the contrary, splendid orchard land can be bought for \$5, \$10 to \$50 per acre. No country in the world abounds more in ideal orchard sites than New England. Fig. 2 is typical of hundreds of sections here, where high,

rolling lands, with splendid orchard soils, can be had at prices which will give the man starting an orchard on them a tremendous advantage over the man who starts on the high-priced lands of the west. If one can buy land ready to set out in trees at \$25 per acre, — and this can be done in many parts of New England, — he has just one-quarter of the capital to pay interest on which the man has who uses \$100 land, and his chances of paying dividends are that much better. The skeptical may ask, "If this is so, why have our New England lands so long gone begging?" and the writer frankly admits that he would like to ask that question himself, though he certainly does not want to be classed among the skeptical as to New England's possibilities in orcharding. As nearly as it has been possible for the writer to figure out a reply to this question, — which is certainly a legitimate one and an important one, if we are to convince those intending to go into orcharding that New England has distinct advantages to offer them, — the reasons are about as follows: —

1. There is the almost universal feeling that an orchard is a long-time investment; that it is going to take years before any returns will be received from it; that, while it might be all right as an investment for one's children, the one who planted it could not expect to get much out of it; and this feeling has been heightened and strengthened here in the east by the records of small family orchards, set years before the orchard was thought of as a serious business proposition, and without any care whatever *have* taken a long time to come into bearing.

2. We are so largely a suburban community here in New England that truck crops and dairying have been profitable; and once these branches were started, they naturally kept in the lead, as farmers are proverbially conservative and slow to change into new lines.

3. There has too long been a feeling here in the east that we could not compete with the west in *any* line of agriculture. When grain crops were the main feature of farm operations, and when the grain States of the middle west were first opened up, it *was* a one-sided fight; and our eastern farmers came to feel that anything which the western farmer *could* produce he was bound to win on, and they have therefore the more assiduously stuck to truck and dairying, where they were safe from that competition. But just as at the "National Corn Show" last year it was a young man from Connecticut who took the prize for the highest yield of corn per acre in the United States, and who is now giving pointers and selling seed corn to his western competitors, so I believe that if the eastern orchardists will only try it, they can as fully and easily upset the notion that the west has an absolute and iron-clad lead in the production of apples.

Next to the question of land, and more important in some ways, I should place the matter of the quality of New England-grown fruit.

I believe that there is no other section where the flavor and aroma and juiciness and sweetness, and, in fact, all those factors on which we base our estimate of the quality of an apple, are more highly developed than right here. This is not my own judgment alone, though I have had many opportunities of comparing the fruit from this region with that from other sections, and particularly with the far western apples so generally found in full possession of our best fruit stores. And almost without exception, when our eastern apples were as well grown and had been as carefully handled, — which I am sorry to be obliged to admit was not always the case, — almost without exception I have had no hesitation in saying that the advantage in quality lay strongly on the side of our home apples. Prof. John Craig of Cornell, one of the highest authorities on such matters, one of the judges at Oregon's "National Apple Show" last year, and a man who has had frequent opportunities of testing this matter, has repeatedly expressed the opinion, both publicly and privately, that for *quality* eastern apples were in the lead. The late Charles Downing held the same view. He received apples from all over this continent where they were grown in his day, and expressed the opinion that the mountain regions of Virginia and North Carolina and the orchard sections of higher latitude — Nova Scotia, New England, etc. — produced apples of the highest excellence of any that he received. And the same opinion has been expressed to the writer on many occasions by those who have taken the pains to test the comparative merits of our New England apples and those of Oregon, Colorado and other western sections. Now, if this is so, the importance of this one fact more than outweighs all other possible advantages that the west can have over us. "Quality" ought to be our motto, to be kept constantly before the attention of our growers, from the time they select their varieties till the ripe fruit is put in the hands of the consumer in absolutely perfect condition as to growing and handling. It ought to be dinged into the ears of the customer and in every way possible brought to the attention of the other senses, — particularly his sense of taste, — until to call for New England apples would be not the *last* but the *first* thing that he would think of doing.

A third factor which certainly *ought* to stand in favor of the New England orchardist is the matter of markets. If he is competing on anything like equal terms with his western competitors in other respects, it would certainly seem that the fact that he is right in the midst of the best markets in the world, while his competitors are three thousand miles *away* from them, ought to give him the difference in the cost of freight and express rates as a margin of profit, or a handicap on his competitors. The thing to do then is to *make* the terms equal, to so adopt up-to-date methods, — whether they be western, northern, southern or eastern, — that this market factor *shall* stand to our credit. Unfortunately, this nearness to markets has in the past worked

as much, if not more, against as for New England fruit; for, while the grower of good fruit finds it easier to get his product in the hands of the consumer, so does the man with wormy or windfall apples for sale, and as at present the old, worn-out orchards of New England are producing an unfortunately large amount of this class of fruit, the customer is led to believe that this is about all we grow here. While our western friends are so far from market that no one is rash enough to ship windfalls or other refuse on here, so they are spared the reflected odium of this trash in the markets, and their fruit ranks correspondingly high with consumers and with everybody who loves a fine thing. Only a few days ago the writer was provided by the secretary of the State Board of Agriculture with a box of apples for demonstration purposes which cost \$5 in hard cash. That was the market rate for these apples, held over in cold storage. They are less at the beginning of the season, of course, but such is their reputation that they are always high.

The foregoing discussion presents the main facts of the orchard situation, both east and west, as the writer sees them. It only remains to "sum up the case," and to make some specific suggestions as to putting our orchard industry on its feet in accordance with the general principles already given; as to adopting some western methods. The writer suggests, to those who may be thinking of planting an orchard, the following points:—

First, if possible, put out as much as 10 acres of orchard. The equipment for running the orchard costs as much for an acre as for 10, and the cost of setting it is very little indeed, comparatively. An orchard in which the writer is interested cost less than 6 cents per tree to fit the land and set the trees. The trees themselves for 10 acres ought not to cost over 15 cents each. Furthermore, with an orchard of this size one can afford to do many things, and will be enthused to do many more, in caring for it which one would not with a smaller orchard. By all means make the orchard large enough.

Second, use the greatest care in choosing varieties. Get prolific ones, for there is no profit in growing an orchard which doesn't bear. You must get the bushels if you are going to get the dollars. If possible, get varieties which have been grown in that particular locality. By all means choose high-quality ones. In the writer's opinion, the Ben Davis ought never to be planted, — in Massachusetts, at all events. Possibly it may be allowable in parts of Maine, where better sorts will not grow; but an eastern Ben Davis is such a poor thing, as compared with those of the middle west, and the variety is such a poor thing anyhow, that we certainly cannot afford to grow it in the Bay State. Select popular varieties, if you can. People don't know the Rome Beauty nor the Wismer's Dessert as they do the Baldwin, the Rhode Island Greening and the Hubbardston.

Third, plan to practise clean cultivation in the orchard from the

Local Baldwins
2¢ each Amherst



Fig. 4.—Local Baldwins. A worm-hole furnished with every one, and still they sell at 2 cents each.

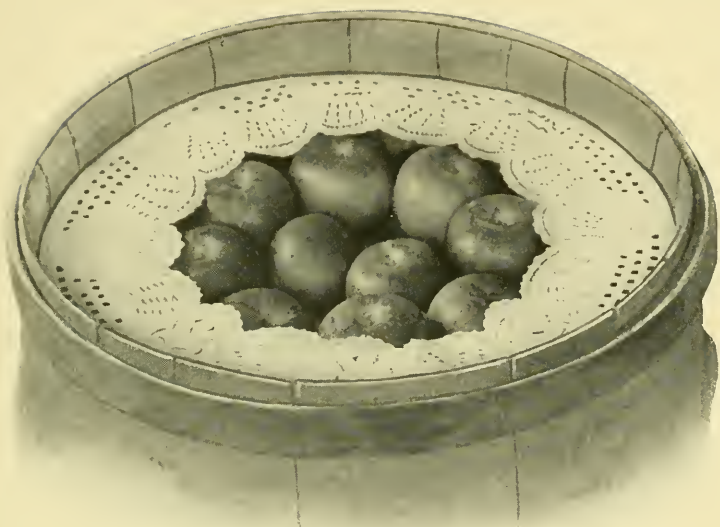


Fig. 5.—A well-packed barrel of apples. The “lace circle” adds to its attractiveness, and with good apples it is good business to use it.

beginning, if possible. It means better care in so many other ways. It means better acquaintance with every tree in the orchard, and consequently better attention to its needs. In particular, it means less borers, and in localities where they are troublesome this is a very important point. If absolutely impossible to cultivate, on account of the steepness of the land, — and there undoubtedly are thousands of acres of splendid orchard land on the hillsides of New England, — then practice the so-called “sod-culture” method; that is, mow the grass and weeds which grow on the land, and leave them for a mulch about the trees.

Fourth, begin to fertilize the orchard as soon as it is set, and keep it up every year. In the writer’s orchard each tree is given 1 ounce of nitrate of soda and 1 pound of a mixture made at the rate of 5 pounds of basic slag or of acid phosphate, to furnish the phosphoric acid, and 3 pounds of high-grade sulphate of potash. This is scattered about the tree — not close enough to injure the trunk — as early as the land is in good condition in the spring. For bearing orchards we use 500 pounds of slag or acid phosphate and 300 pounds of high-grade sulphate of potash per acre. Mr. J. H. Hale uses 1,000 pounds of bone meal and 400 pounds of muriate of potash. Either of these formulas is high feeding, but high feeding pays with trees as truly as with steers; and particularly if one is starting an orchard on old pasture land, or lands which have been otherwise depleted of their plant food, — and these sorts of lands often offer ideal orchard sites, — it is imperative to get back the plant food into them, and in liberal quantities, too.

Fifth, spray the orchard. It isn’t always necessary to spray it during the first few years; but, on the other hand, it is sometimes absolutely necessary if the trees are to be saved. Rose chafers will sometimes drop down on them, or crawl up, in a night, and prompt measures and strong poisons are necessary to prevent great damage. A good spray pump ought to be bought when the orchard is set, and kept in readiness. Keep an eye out for the San José scale, and for anything else which may attack the trees, and keep ahead of them. When the trees come into bearing, spraying becomes still more imperative. The codling moth is always rampant in our orchards, and wormy apples are tolerated in a way which is ruinous to our reputation. Fig. 4 shows some Baldwins which were on sale at a fruit store in the town of Amherst, and practically every one had a worm in it. One of the most prominent orchardists of Massachusetts stated to the writer last year that in his opinion the Canadian law, which allows 10 per cent of wormy or otherwise defective specimens in No. 1 apples, was far too strict, and that his own No. 1’s that year would average nearly 50 per cent wormy. Until we get a different view from this of what is allowable in No. 1 fruit, the west will continue to take charge of our best markets.

Sixth, practise thinning when trees set heavily. This gets rid of the defective specimens of fruit before the tree has had the drain of bringing them to full maturity, and the result is better fruit for that year, and more likelihood of a crop the following year. Some varieties need thinning far more than others, but any variety of any fruit which tends to overbear will be benefited by it; and it is by no means as expensive an operation as many people think.

Sixth, and last, handle the fruit with the greatest care, grade it with the greatest accuracy, and pack it with the greatest skill and honesty. In picking and sorting, the fruit ought never to be tossed about or let fall. No apple should be let go of until it is in contact with those already in the basket. Pad baskets and tables, to avoid bruising. For packages use the regular bushel box for all the best grades of apples; either 10 by 12 by 20 inches inside measure, or $10\frac{1}{2}$ by $11\frac{1}{2}$ by 18 inches. The old, flat bushel box used for vegetables ought to be abandoned. The box ends should be of three-fourths-inch stock, the sides of three-eighths-inch, and the top and bottom of one-fourth-inch. For the top, bottom and sides good clean spruce, straight-grained and free of knots, is best. It must be good stock, to provide strength and springiness with lightness. Where barrels are used, — and they will undoubtedly long continue to be our main package, — get new ones, if possible; second-hand ones are never entirely satisfactory. And grade and pack with the greatest care. Carry out J. H. Hale's famous motto, found on his labels, "U C Top U C All." Use the lace circles shown in Fig. 5, and do everything possible to make the package and its contents attractive.

And, above and beyond all, *have faith in the industry*. Talk New England fruit to your friends and neighbors and customers. Tell them we can grow the finest apples in the world, and that we ought to take hold and recover our lost markets. And then *practise what you preach*.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF SEPTEMBER, 1909.

PEAR CULTURE.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, *Secretary.*

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER
UNDER ACT OF CONGRESS OF JUNE 6, 1900.

BOSTON:

WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.

1909.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

CROP REPORT FOR THE MONTH OF SEPTEMBER, 1909.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Oct. 1, 1909.

Bulletin No. 5, Crop Report for September, is herewith presented. An article will be found at the close of the bulletin on "The culture of the pear," by George T. Powell of Ghent, N. Y. Mr. Powell is a fruit grower of a great deal of experience, and at one time was largely engaged in the growing of pears. The difficulties which led him to reduce the area of his pear orchard have been surmounted by recent methods. The area devoted to this fruit all over the country has been greatly reduced in recent years, while the demand has increased, so that at present prices pear-growing is an attractive branch of horticulture. The inquiries we have received for information on this fruit have led us to the conclusion that more interest is being taken in the subject than for some time, and we therefore feel that the article is an important and timely one.

PROGRESS OF THE SEASON.

The monthly report of the Crop Reporting Board of the Bureau of Statistics of the Department of Agriculture (Crop Reporter for September, 1909) shows the condition of corn on September 1 to have been 74.6, as compared with 84.4 a month earlier, 79.4 on Sept. 1, 1908, 77.1 in 1907, and a ten-year average of 80.6.

The average condition of spring wheat when harvested was 88.6, as compared with 91.6 a month earlier, 77.6 in 1908, 77.1 in 1907, and a ten-year average of 76.9.

The average condition of barley when harvested was 80.5, against 84.5 a month earlier, 81.2 in 1908, 78.5 in 1907, and a ten-year average of 79.8.

The average condition of the oat crop when harvested was 83.8, against 85.5 a month earlier, 69.7 in 1908, 65.5 in 1907, and a ten-year average of 79.8.

The preliminary estimate of the area of rye harvested is .5 per cent less than last year. The preliminary estimate of yield per acre is 16 bushels, against 16.4 last year, 16.4 in 1907, and a ten-year average of 15.8. The indicated total production is 31,066,000, against 31,851,000 finally estimated in 1908, and 31,566,000 in 1907. The quality of the crop is 92.9, against 92.7 last year.

The average condition of buckwheat on September 1 was 81.1, against 86.3 a month earlier, 87.8 in 1908, 77.4 in 1907, and a ten-year average of 86.4.

The average condition of white potatoes on September 1 was 80.9, against 85.8 a month earlier, 73.7 in 1908, 82.5 in 1907, and a ten-year average of 80.4.

The average condition of tobacco on September 1 was 80.2, against 83.4 a month earlier, 84.3 in 1908, 82.5 in 1907, and a ten-year average of 82.7.

The average condition of apples on September 1 was 44.5, against 46.3 a month earlier, 52.1 in 1908, 34.7 in 1907, and a ten-year average of 55.5.

The preliminary estimate of the yield per acre of hay is 1.41 tons, as compared with 1.52 finally estimated in 1908, 1.45 in 1907, and a ten-year average of 1.43 tons. A total production of 64,166,000 tons is thus indicated, as compared with 70,798,000 finally estimated in 1908. The average quality is 93, against 94.5 last year.

In Massachusetts the average condition of corn on September 1 was given as 87; the average condition of oats when harvested as 85; the average yield per acre of rye as 16.2 bushels, the production of rye as 65,000 bushels, and its quality as 96; the average condition of buckwheat as 92; the yield per acre of hay as 1.15 tons, the production of hay as 673,000 tons, and its quality as 96; the condition of clover for seed as 94; the condition of tobacco as 85; the condition of potatoes as 80; the condition of apples as 58; the condition of Canadian peas as 90; the condition of millet as 84; the condition of peaches as 70; the condition of pears as

72; the condition of grapes as 89; the condition of watermelons as 77; the condition of cantaloupes as 76; the condition of cranberries as 75; the condition of tomatoes as 86; the condition of cabbages as 84; the condition of onions as 83; the condition of dry beans as 80; the condition of Lima beans as 80.

TEMPERATURE AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM NATIONAL WEEKLY WEATHER BULLETIN.]

Week ending September 6. — The week was marked by an unusual succession of high-pressure areas moving from the British northwest into the upper Missouri valley, and thence eastward over the northern portion of the country, with resulting cool weather. The weather continued warm over the Gulf States and the southern portions of the Great Plains region for the sixth consecutive week. The mean temperature ranged from 5° to 8° below the normal for northern sections, and from 4° to 6° above the normal for southern. Rain moved eastward from the Plateau region during the week, but only scattering showers fell in the Mississippi and Ohio valleys. Over the remaining districts east of the Rocky Mountains the precipitation was unusually light, and in many localities the week was practically rainless. There was ample sunshine in all districts east of the Mississippi River.

Week ending September 13. — The cool weather prevailing at the end of the previous week continued its eastward progress during the first of the week. At the same time warmer weather developed in the northwest and interior valleys, continuing to the closing days of the week, when high pressure and cooler weather again prevailed. High temperature again dominated the west Gulf and southern Plains region. The weekly means were generally below the normal along the Atlantic coast and over New England, New York and portions of Pennsylvania. The precipitation during the week was of the usual summer type, largely scattered local showers, light, as a rule. Good rains occurred over many portions of the lower Missouri, middle Mississippi and lower Ohio valleys, also at points near the Atlantic coast from Florida to southern New England.

Week ending September 20. — An area of high pressure and attendant cool weather occupied the districts from the Missouri valley westward to the Pacific at the beginning of the week, while to the eastward, under generally diminishing pressure, the weather continued comparatively warm. Cool weather continued over the Mountain and Plateau districts during the week, but east of the Mississippi the temperature was generally above the normal. During the closing days of the week temperatures below freezing occurred in northern New York and New England. Some heavy rains occurred during the first two days of the week from the middle Mississippi valley eastward to the Lake region, and near the middle of the week over the Gulf and South Atlantic States; aside from which the rains of the week were generally light and unequally distributed.

Week ending September 27. — There was a tendency toward warmer weather over all the interior districts, especially in the northern Rocky Mountain region, at the beginning of the week. This was followed by a cool wave in these regions, with unusually cool weather on the 22d. During the remainder of the week there were continued low temperatures over all northern districts. There was an excess of about 3° over northern New England. A severe tropical storm entered the United States near the mouth of the Mississippi River during the 20th, and continued northward, with heavy rains, but decreasing winds. Some comparatively heavy rains occurred along the Atlantic coast from Virginia northward to New England, and over the lower Lake region on the 24th and 25th. Elsewhere the rainfall was mostly light.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending September 6. — New England. Boston: The precipitation averaged below normal, but frequent moderate showers have been beneficial. The temperature was low during the early part of the week, with light to heavy frosts in many localities in central and northern New England, which did much damage. Sunshine was about normal.

Week ending September 13. — New England. Boston: Moderate temperatures prevailed during the week, though frost formed on the 8th in some localities in Maine, New Hampshire and Vermont. Warmer weather is needed. The rainfall was small in the northern portion, but about normal in the southern. Sunshine was normal.

Week ending September 20. — Moderate temperatures prevailed, except that they were low on the mornings of the 19th and 20th, with frost in some northern and interior sections. Scattered showers fell on the 15th and 16th, and general showers occurred on the 17th. The rainfall was generally deficient. There was an average amount of sunshine.

Week ending September 27. — New England. Boston: Moderate temperatures prevailed through the week, with frosts during the early part in the northern portion. There was considerable cloudy weather, and the sunshine was below the average. Copious and general rains during the last of the week gave precipitation generally much above the normal.

THE WEATHER OF SEPTEMBER, 1909.

There was an unusual prevalence of fair and sunny weather during the first three weeks. Fairly well-distributed showers from the 1st to the 11th furnished sufficient precipitation for seasonal conditions in all sections, and in some localities an excess of moisture. From the 12th to the 21st there was almost an entire absence of rain, and the skies were generally clear. The remainder of the month was unsettled, with much cloudiness and daily rains, especially in eastern portions of the State, from the 22d to the 28th. The month as a whole was wetter than usual, with the monthly precipitation from 15 to 25 per cent above the September normal. The temperatures during the month were remarkably even, there being no days that were abnormally warm or cold. The maximum temperatures rose to the 80's in nearly all sections on several days, and the minimum temperatures were in the 40's, except in some coast sections. In some interior localities, where conditions were favorable, moderate to killing frosts occurred on two to three mornings. The monthly temperature varied very little from the normal, being a few

degrees above in some sections and slightly below in others. The winds were generally light and variable, though in coast sections there was a prevalence of easterly winds. Generally speaking the weather of the month was exceptionally pleasant, and especially favorable to outdoor pursuits, harvesting and housing of crops, to fall plowing and seeding and to fall pasturage.

In the circular to correspondents returnable September 23 the following questions were asked:—

1. How does the crop of Indian corn compare with a normal crop?

2. Are rowen and fall feed up to the usual average?

3. Has the usual amount of fall seeding been done, and what is its present condition?

4. How does the onion crop compare with a normal crop?

5. How do potatoes compare with the normal in yield and quality?

6. What is the prospect for root crops, celery and other late market-garden crops?

7. How have apples, pears, peaches, grapes and cranberries turned out?

8. Has there been injury from frost, and, if so, on what dates did it occur?

Returns were received from 131 correspondents, from which the following summary has been compiled:—

INDIAN CORN.

The corn crop came forward slowly during the month, and at time of making returns it seemed probable that an average crop would be secured, barring immediate and killing frosts. The crop is generally regarded as from ten days to three weeks late. There is some complaint of it not earing well in some sections, but this is not general. The absence of killing frosts in most sections up to the time of making returns made it possible to secure an average crop, where under ordinary conditions little grain would have been harvested. Ensilage corn is generally reported as in excellent condition, and was being put into the silo in most localities. Field corn had not

been cut, as a general rule, at the date of returns, nor would it be cut before the last days of the month, unless it should appear that killing frosts were imminent.

ROWEN AND FALL FEED.

There was very little rowen in most sections, except on new-seeded and fertile land. There is usually little rowen secured except under these conditions, but this year the amount seems to have been reduced about as low as possible. The showers of the month were sufficient to keep feed in pastures green, but there does not seem to have been any great growth, and in many sections cattle have been fed at the barns for nearly two months. The partial drought, coming after last year's droughty autumn, has reduced the water supply in the soil very much, and it seems probable that there has been considerable injury to mowings, especially to old mowings, that will not be apparent until next season.

FALL SEEDING.

Very much less than the usual amount of fall seeding has been done, owing to the dry weather. Where seeding was done in corn it has come up well, owing to the occasional showers, and under the shade of the corn has developed very well indeed. Seeding under other conditions appears to have germinated poorly, and not to have made a great deal of progress after germination. It seems probable that the total amount of seeding for this fall will be considerably under the normal, which, taken with the small amount put in last year, will doubtless have an appreciable effect on the hay crop of 1910.

ONIONS.

Onions are generally an average crop in the Connecticut valley, and approach very closely to the normal in that section. They are late in maturing, but appear to be sound and of good size. In eastern sections the crop is generally reported to be a small one, owing to the small size of the bulbs and the ravages of maggots. The Connecticut valley is the principal onion-growing section, so that the crop as a whole should approximate something near an average crop.

POTATOES.

The potato crop appears to be considerably better than earlier reports have indicated. Harvesting is not nearly completed, as this crop is backward, like all others; but the reports generally indicate that there is a fair average crop of good-sized tubers. There are very few complaints of rot, and blight does not seem to have shortened the crop to any extent. There are some complaints of scab, but no more than usual. The quality of the tubers is generally reported as excellent.

ROOT CROPS, CELERY, ETC.

Root crops are hardly up to the normal, and are backward because of drought and cool weather. With rain and seasonable fall weather they should generally develop well. Celery is hardly up to the normal, but it is not too late for substantial improvement, if the fall rains are plentiful. Late market-garden crops have been checked by the partial drought, and are not in very flourishing condition, but, like celery, may come forward well with rain. Cabbages are reported to be generally a good yield. Vines have not done especially well this season, but neither do they show many failures.

FRUIT.

Apples are a light crop in almost all sections, and generally small in size. Where sprayed, the fruit appears to be smooth and fair; but unsprayed fruit shows more than the usual amount of insect damage, owing probably to the short crop. Well-cared-for apple orchards have done well, but there are not enough of such orchards to materially affect the general crop. Pears are a good average crop. Peaches are a good crop in most localities, but there are considerably fewer trees in the State than several years ago, and the total crop will therefore be smaller. Grapes are generally a heavy crop, and have matured without injury from frost. Cranberries are a light to medium crop on the Cape. Considerable injury from frost on August 30 is reported from other

sections of commercial production, and this injury seems to be universal except in southeastern sections. The berries are reported as being rather smaller than usual.

INJURY FROM FROSTS.

Light frosts occurred in many sections on the mornings of August 30 and September 20, with some reports of injury on the 7th and 8th of September. There does not seem to have been much injury to the principal farm crops in any section, and high lands seem to have escaped damage altogether up to the time of making returns. This absence of frost damage has made possible the maturing of crops, many of which would have been partial failures had there been the usual damage from this cause during the early part of the month.

NOTES OF CORRESPONDENTS.

(Returned to us September 23.)

BERKSHIRE COUNTY.

New Marlborough (E. W. RHOADES). — Indian corn is late, and below an average crop. There is but little fall feed, on account of dry weather. Very little fall seeding has been done as yet. There is a fair yield of late potatoes, of excellent quality. There will be half a crop of winter apples; peaches good and grapes good, but late. There has been no frost as yet to do damage.

Tyringham (EDWARD H. SLATER). — Indian corn is about 80 per cent of a normal crop. The dry weather has seriously injured fall feed and rowen. Very little fall seeding has been done at the present time. Potatoes are a full crop, and of good quality. The apple crop is below the average; grapes have turned out well. There has been no serious injury from frost.

West Stockbridge (J. S. MOORE). — There is about an average crop of Indian corn. Rowen and fall feed are average, except on very dry ground, better than last year. The usual amount of fall seeding has been done, and the present prospect is good. Potatoes are a very good crop, especially where sprayed. Celery is looking well. There will not be more than half a crop of apples; pears abundant; no grapes or cranberries. There have been no frosts as yet to do any damage. Nearly all farm produce brings higher prices than a year ago, and farmers as a rule are well satisfied.

Richmond (TIMOTHY B. SALMON). — The corn crop is below the average, much of it not getting ripe. Rowen and fall feed are up to the usual average. The usual amount of fall seeding has been done, but it is very small. There is an average yield of potatoes, and they are of very good quality. Root crops are good; very little celery grown. Apples are good; pears a large crop; no peaches; some grapes. There has been a little injury to corn and buckwheat on low land by frost. There seems to be a larger acreage of buckwheat than usual, and it looks well.

Washington (E. H. EAMES). — Corn compares well with the normal, but is somewhat late. Rowen is a good crop, and fall feed is average. Not much fall seeding has been done as yet. Potatoes are fully up to the normal in yield and quality. Root crops, celery and other late market-garden crops are not raised for market. There have been light frosts, but not enough to do much damage.

Hinsdale (THOS. F. BARKER). — Indian corn is later than usual, with a smaller acreage and small yield. Hardly any fall seeding has been done as yet. Early planted potatoes gave a normal yield; late potatoes poor. Root crops, celery and other late market-garden crops are very little raised. There will be a fair crop of apples; no pears; a few cranberries. There was injury from frost on September 20 and 21.

Windsor (HARRY A. FORD). — Indian corn is two weeks late. There is no rowen. Not much fall seeding has been done as yet. Potatoes were never better in yield and quality. The prospect is good for root crops, celery and other late market-garden crops. There will not be over one-third of a normal crop of apples; no other fruits raised. There has been no damage from frost as yet.

New Ashford (W. L. SMITH). — The corn crop is not as good as last year. There is no rowen or fall feed, because of drought. Onions are about an average crop. Some fields of potatoes are yielding well, while others are not returning the seed. The prospect for root crops, celery and late market-garden crops is very good. There will be an average fruit crop, of good quality. There has been no damage from frost in this town.

Williamstown (S. A. HICKOX). — Indian corn will nearly all ripen, and will be 80 per cent of a full crop. Rowen started very late, and in some places has not started yet; drought has cut fall feed short. Less than the usual amount of fall seeding has been done, and it is in only fair condition. Potatoes are a fair crop, of first-class quality. Root crops and celery are good yields. Apples, 75 per cent of a full crop; pears, 50; no peaches; grapes, 90. There was damage from frost September 19 and 20.

FRANKLIN COUNTY.

Leyden (FRANK R. FOSTER). — Corn for ensilage is O. K.; field corn is late, and damaged by frost. Rowen and fall feed are not up to the usual average. The usual amount of fall seeding has been done, and it is in good condition. Potatoes are a fine crop. Apples are a good crop; peaches good; grapes fine. There was a heavy frost on the morning of September 21, cutting all corn and vines on low lands.

Gill (F. F. STOUGHTON). — Indian corn is just about a normal crop. Rowen and fall feed are up to the usual average. Farmers seed in August in corn. Onions are not raised here. Potatoes have not been harvested as yet. Root crops, celery and other late market-garden crops are little raised. Apples are a light crop. There has been no damage from frost to date.

Conway (L. T. HOPKINS). — Indian corn will be fully an average crop. Rowen and fall feed are not up to the usual average. Some fall seeding is being done at the present time; seed has germinated on but few fields. Potatoes are normal in yield and above normal in quality.

Root crops, celery and other late market-garden crops are not grown for market. Apples, pears and peaches are light; grapes normal. There has been no damage from frost.

Deerfield (DWIGHT A. HAWKES). — Corn is better than a normal crop. Rowen and fall feed are much below the usual average. The usual amount of fall seeding has been done, and it is in good condition. Onions are an average crop. Potatoes are a full average in yield and quality. Apples are somewhat below an average crop. There has been no injury from frost.

Sunderland (GEO. P. SMITH). — Corn is a normal crop or better, and is now well matured. Rowen and fall feed are good on fertile land. The usual amount of fall seeding has been done, and it looks well. Onions are more than an average yield, of good quality. Potatoes are a fair yield, of good quality. Root crops, celery and other late market-garden crops are not much grown. All fruit except grapes is much below the normal. There has been no damage from frost. Onions are selling at 50 cents per bushel. Tobacco has cured well, and many crops have been sold at from 14 to 15 cents per pound in the bundle.

Wendell (N. D. PLUMB). — Indian corn is somewhat backward, but above a normal crop. Fall feed is very backward, on account of drought; and rowen is not over half a normal crop. Potatoes are about a three-fourths crop in quantity, and of good quality. Root crops, celery and other market-garden crops are raised for home use only. There is about a normal fruit crop. The frost has done some damage along the lowlands and streams.

Northfield (T. R. CALLENDER). — Indian corn is fully up to an average crop, and is now practically safe from frost. Rowen is about half a full crop, and fall feed is below the average. Fall seeding is looking well, with about the usual amount. Onions are about a normal crop. The yield of potatoes is generally good, and the quality excellent. All roots and late garden truck are looking well. Apples are a light crop. There has been no injury from frost. Sweet corn for canning was below an average crop; all harvested this week. Cucumbers for pickles not up to the average of the last few years, but a fairly profitable crop.

Orange (WM. A. TAYLOR). — Indian corn is about a normal crop. There is not over 25 per cent of the usual yield of rowen and fall feed. Less than the average amount of fall seeding has been done, and it is in fair condition. Yield of potatoes, 50 per cent; quality good. The prospect for root crops, celery and other late market-garden crops is fair. Apples are below average; other fruits good. There have been slight frosts, doing little or no damage.

New Salem (DANIEL BALLARD). — The corn crop is late in ripening, and perhaps a little under the average. Rowen and fall feed are below the average. There is about the usual amount of fall seeding done, and it is looking fairly well. Onions are not much raised. Potatoes

are a normal yield, with quality good. Root crops, celery and other late market-garden crops are looking well. There will be a light crop of apples; pears, peaches and grapes plenty. There was a slight injury from frost on low lands early in September.

HAMPSHIRE COUNTY.

Greenwich (W. H. GLAZIER). — The corn crop is heavy, but late. Very little rowen will be cut, and fall feed is not up to the average. Not as much fall seeding as usual has been done. The yield of potatoes is lighter than usual, but the quality is good. Root crops, celery and other late market-garden crops are grown for home use only. Fruit is little grown here. There has been but little injury from frost. We are just beginning to cut corn.

Hadley (H. C. RUSSELL). — Indian corn is a good crop, but is late. Rowen and fall feed are below the usual average. The usual amount of fall seeding has been done, and it is in fair condition. Onions are late, but are curing down finely. Late potatoes are a good crop. There will be a small crop of apples. There has been no injury from frost as yet.

South Hadley (W. F. PERSON). — Corn in this section is a little more than an average crop. Very little rowen will be cut this year. Fall seeding in corn looks well, but in other places it looks poorly. The onion crop is good. Root crops and garden crops are good. Apples are few, and of poor quality; pears light; peaches good; grapes good; cranberries not grown.

Easthampton (WM. C. CLAPP). — Indian corn is later than usual, and not up to the normal. Rowen and fall feed are not up to the usual average. Hardly the usual amount of fall seeding has been done, and it stands in need of rain. Potatoes seem to be fully a normal crop. There is not much celery grown; other root crops up to the average. There will be a light crop of apples; not many pears or peaches grown. Tobacco is curing well, and farmers hope for a good price. There has been no injury from frost.

Southampton (C. B. LYMAN). — Indian corn is fully up to the average, but very late. Rowen is a light crop, and fall feed is about as usual. About the usual amount of fall seeding has been done, but it is late, and does not show up much at present. Onions are rather less than a normal crop. Potatoes are a large yield on some fields and very small on others; quality never better. Not much is done here with market-garden crops. Apples are a light crop; pears, peaches and grapes a full crop. No injury from frost.

Westhampton (LEVI BURT). — Indian corn is full average crop. Fall feed is not up to the usual average, and rowen is not over half a crop. The usual amount of fall seeding has been done, and it is in fine condition. Potatoes are of good quality, and the crop is fully normal. Apples are not picked as yet, but are of good quality. There was a

light frost on the morning of September 20. What few peach trees there are have yielded well; grape vines are hanging full; pears a full crop.

Williamsburg (F. C. RICHARDS). — Indian corn is a good average crop. Rowen is about a failure, and fall feed is poor. The usual amount of fall seeding has been done, and it is in good condition. Onions are more than an average in quantity and quality. Potatoes are a good average crop. The prospect is good for root crops, celery and other late market-garden crops. Apples are half a crop; pears, 30 per cent; peaches, 85. There has been no injury from frost.

Chesterfield (HORATIO BISBEE). — Corn has made a good growth, but is very backward and will hardly ripen. Rowen and fall feed are not up to the usual average. The usual amount of fall seeding has been done, but it has made little growth as yet. Late potatoes are coming in good, and are of good quality. Fruit is not yet harvested; apples promise a rather light crop. There has not been much injury from frost.

HAMPDEN COUNTY.

Tolland (E. M. MOORE). — Corn is from ten days to two weeks late, but is otherwise an average crop. Rowen and fall feed are about 50 per cent below the average. But little fall seeding has been done as yet, on account of dry weather. Onions are about three-fourths of an average crop. Potatoes are the best crop we have had in five years, and of good quality. Root crops, celery and other late market-garden crops are a little below the average. There will be about half crops of apples, grapes and cranberries. There was slight injury from frost on September 19.

Southwick (L. A. FOWLER). — Indian corn is a fairly good crop. Fall feed is good, but rowen is not up to the usual average. There has been a little more fall seeding done than usual, and it is in good condition. Onions are not raised to any extent. Early potatoes were almost a failure; late promise better, but are not up to the average. The prospect is good for root crops, celery and other late market-garden crops. Fruit is below the usual average. There has been no injury from frost. The tobacco crop is mostly housed in fine condition; the weather has been ideal for curing, and the growers feel that they have a banner crop.

Agawam (J. G. BURR). — There is a good crop of corn. Rowen and fall feed are not up to the usual average, there being but little rowen. More than the usual amount of fall seeding has been done, and it is in good condition. The onion crop is light. Potatoes are a good crop, of good quality. Apples, grapes and cranberries are good crops; other fruits light. There has been no frost. The tobacco crop is good.

West Springfield (T. A. ROGERS). — Indian corn is half a crop on light land, but is good on heavier land, where well manured. Rowen

is below an average crop, but fall feed is doing well. Less than the usual amount of fall seeding has been done, and it has started slowly, but is looking well considering the dry weather. Few onions are raised here; some fields good, others poor. Celery late, but looking well; late root and garden crops looking well. Apples have dropped and blown off badly; pears light; peaches full; grapes normal; no cranberries. There has been no damage from frost.

East Longmeadow (JOHN L. DAVIS). — Indian corn is an average crop, but is late. Rowen and fall feed are not over three-fourths of the average. Not much fall seeding has been done, but it is doing very well. Potatoes are about 60 per cent of a normal yield, and of good quality. The prospect for root crops, celery and other late market-garden crops is very good. Apples are dropping; pears and peaches plenty; grapes average. There was a light frost two or three weeks ago, but no injury.

Hampden (JOHN N. ISHAM). — Indian corn is a good crop, on the whole. There is very little rowen, and fall feed is short. About the usual amount of fall seeding has been done, and the condition is good. The onion crop is good, but is ripening slowly. Potatoes average about two-thirds of a full crop. Root crops are doing well. Apples are less than half a crop; pears good; peaches and grapes very good. No frost as yet. Silos are being filled, and the drought has injured the corn crop the least of any.

Palmer (O. P. ALLEN). — Indian corn is not up to the normal, the earing not being as full as the stand. Rowen and fall feed are not up to the usual average. Not as much fall seeding as usual has been done, but the recent rains have brought it into fair condition. Onions are not grown here. The yield of potatoes is not as heavy as usual, but they are of good quality. Root crops are in fair condition; little celery raised. Apples are a smaller crop than usual; pears, peaches and grapes have done well. There has been very little injury from frost.

Holland (A. F. BLODGETT). — Corn is fully up to the average, but is late in ripening. There is scarcely any rowen in this town. Rather more rye has been sown than usual, but it is held back on account of dry weather. Onions are hardly an average crop. The potato crop is much better than last year in all respects. The season has been too dry for beets; carrots are doing fairly well. All fruits except apples have been better than usual. There was a slight frost on September 18, doing little if any damage here.

Brimfield (ORUS E. PARKER). — There is about a three-fourths crop of corn. Rowen and fall feed are not more than half crops. The usual amount of fall seeding has been done, and it is looking fairly well. Potatoes are of good quality, and a three-fourths yield. Apples are very light; pears light; peaches good; grapes abundant. There has been no injury from frost in this section as yet.

WORCESTER COUNTY.

Warren (W. E. PATRICK). — Indian corn is very backward, but if killing frosts hold off long enough, there will be a medium crop. There has been very little rowen cut this fall, and fall feed is short. The weather has been too dry for fall seeding, except on very moist land, and much less than usual has been done. There is an average yield of potatoes, of excellent quality. Root crops, celery and other late market-garden crops are very little grown. Apples are very poor; there are a few pears, and large crops of peaches and grapes. There is injury to some fields of corn from frost, about August 30.

West Brookfield (MYRON A. RICHARDSON). — Indian corn will be up to the average if frost holds off so it can ripen. The rowen crop is almost a failure, but fall feed is fair. The usual amount of fall seeding has been done this fall, and it is looking finely. The potato crop is turning out finely, but they are more or less scabby. Celery and market-garden truck are not raised here. Apples are numerous, but are wormy and knurly; peaches and grapes made a big yield. There has been a slight frost on very low places.

New Braintree (CHAS. D. SAGE). — Indian corn is very uneven, some fields being good and others poor. There is no rowen to speak of. Very little fall seeding has been done as yet. Potatoes are 75 per cent of the normal in yield, and of fair quality. Root crops, celery and other late market-garden crops are very little grown. Apples are 40 per cent of a full crop; pears, 70; peaches, 75. A frost late in August did damage on low ground. The year has been a hard one for the farmer; corn and apples light crops, no rowen, no feed in pastures.

Oakham (JESSE ALLEN). — There is a full average crop of Indian corn. There is no rowen, and very little fall feed. The usual amount of fall seeding has been done, and it looks well. Onions are little raised. Potatoes are an excellent crop in yield and quality. The prospect is good for celery, root crops and late market-garden crops. There is a very small yield of fruit of all kinds. There has been very little injury from frost as yet. Abundant rains are greatly needed.

Dana (LYMAN RANDALL). — Corn will not be quite an average crop, but better than was expected two weeks ago. Rowen is not half a crop, and fall feed is not up to the average. There has not been a great amount of fall seeding done, but what has been done is looking well. Potatoes are fully up to the average, both in yield and quality. All root crops are good; not much celery grown. Apples are a very small crop; pears and peaches fair; grapes heavy; cranberries good. There has been very little damage from frost.

Petersham (B. W. SPOONER). — The corn crop is late, but there are some fine fields. The drought has had a bad effect on both rowen and fall feed. No fall seeding has been done in this vicinity. Onions are raised for home use only. There are some good fields of potatoes,

yield about normal. There is the lightest crop of fruit for years. The present mild weather is helping late crops finely; no damage from frost as yet.

Fitchburg (DR. JABEZ FISHER). — Indian corn is an inferior crop, and late about ripening. There is scarcely any rowen, but some fall feed. Potatoes are a fair yield, and of high quality. Apples are not yet harvested, but promise 20 per cent; pears, 40; grapes, 100. No frost as yet.

Ashburnham (E. D. GIBSON). — Indian corn is a three-fourths crop. There is very little rowen or fall feed. Very little fall seeding has been done, most land having been too dry to work, and I think very little will be done this fall. Potatoes are a three-fourths crop, of splendid quality. Root crops, celery and other late market-garden crops are little grown here. Apples few; pears fair; grapes not ripe. There were light frosts on September 19 and 20, doing a little damage on low land.

Hubbardston (CHAS. C. COLBY). — Indian corn is about 75 or 80 per cent of a normal crop. The rowen crop is nearly a failure. What little fall seeding has been done is very backward, owing to dry weather. Potatoes will prove an average crop, of good quality. Apples are a very light crop; pears and grapes good. Quite heavy frosts did a good deal of damage on August 30 and September 20.

Princeton (A. O. TYLER). — There is about three-fourths of a normal crop of corn. Rowen and fall feed are not up to the usual average. It is a little early yet for fall seeding. Onions are not raised here. Quality of potatoes good, but yield somewhat affected by dry weather. The prospect is good for root crops, celery and other late market-garden crops. There is a pretty good crop of fruit. There was injury from frost of August 30 and September 20.

Sterling (HENRY S. SAWYER). — There is three-fourths of a crop of corn. Rowen and fall feed are much below the average. About the usual amount of fall seeding has been done, and it is in fair condition. Potatoes are of good quality, and less than an average yield. Beets, carrots and turnips look well. There is prospect of a fair crop of apples, 50 per cent of the normal; also of pears, peaches and grapes. There was a slight frost August 31, doing little damage.

Bolton (H. F. HAYNES). — Indian corn is late but about a normal crop. Rowen and fall feed are up to the usual average. The usual amount of fall seeding has been done, but it has not germinated well, owing to dry weather. Onions are a poor crop. Potatoes are a big yield, except on light ground. Root crops, celery and other late market-garden crops are rather poor. There have been no frosts to do any great damage.

Shrewsbury (F. J. REED). — Corn is not as good as a normal crop, and the ears are not filled out. Rowen and fall feed are far below the average. Some fall seeding has been done, but it is not in very

good condition. Onions are a very poor crop, maggots and blight having destroyed them. Potatoes are a good crop in quality, and a fair yield. There are no apples, and very few pears, peaches and grapes. There was a slight frost August 31, but it hurt only squash vines and beans.

Blackstone (O. F. FULLER). — Indian corn is a very good crop. There is a good fair crop of rowen, and good fall feed. The usual amount of fall seeding has been done. Very few onions are raised here. Potatoes are a good normal yield. Root crops give promise for a good yield. There are very few apples; few pears; a good crop of peaches and a good yield of cranberries. We have had a light frost, but it did little damage, the hail storm doing much more.

MIDDLESEX COUNTY.

Hopkinton (W. V. THOMPSON). — Field corn is a full normal crop, with good cultivation; ensilage corn an average crop, under same conditions. There is no rowen except on reclaimed meadows. The usual amount of fall seeding has been done, and it looks fairly well. Not many potatoes have been dug as yet. Root crops, celery and market-garden crops are not much raised. Apples are a light crop; pears fair; peaches half a crop; grapes a full crop. There was a light frost on low ground August 30. There has not been rain enough at one time to reach the bottom of a fairly deep furrow, and the ground is dry at the present time.

Marlborough (E. D. HOWE). — Indian corn is 95 per cent of a normal crop. Rowen and fall feed are emphatically not up to the usual average. Onions are a three-fourths crop. Potatoes are 60 per cent of the normal in yield, and 95 per cent in quality. The prospect is fair for root crops, celery and other late market-garden crops. Apples, 45 per cent of a full crop; pears, 50; peaches, 60; grapes, 90. There is no frost as yet.

Stow (GEO. W. BRADLEY). — The corn crop is not quite up to the average. Newly seeded fields had very fair rowen, but it hardly started on old fields. There is very little fall seeding done as yet. The potato crop is much better than last year, both in yield and quality. Prices for fruit have averaged better than quality. No frosts so far, except a little in meadows.

Westford (J. W. FLETCHER). — There is about a three-fourths crop of corn. Rowen and fall feed are not up to the usual average. The usual amount of fall seeding has not been done. Potatoes are about an average yield; quality fair, some rot. There is a good crop of fruit. There has been no injury from frost as yet.

Dunstable (A. J. GILSON). — Indian corn is considered below a normal crop. Rowen and fall feed are below the usual average, and very little rowen will be cut this season. Only a small portion of the fall seeding has been done, and that is growing very slowly. Onions

are raised only on a small scale. Potatoes are proving a better crop than has been expected, and are of good quality. There is little market gardening here; root crops are about normal. Grapes and cranberries are good crops; other fruit light. There was a frost on the morning of August 31 that did some damage to the principal crops, and another on September 20 that affected squash vines.

Billerica (E. F. DICKINSON). — Indian corn is fully a three-fourths crop. There is but a moderate crop of rowen; fall feed fair in condition. Fall seeding is late, hardly begun as yet. Potatoes are a good crop in yield and quality. Root crops, celery and other late market-garden crops promise well. Apples are better than was expected; pears a light crop; also peaches. There was slight injury from frost on August 31.

Concord (WM. H. HUNT). — Indian corn will be below the average. The rowen crop is light, but fall feed has been helped by the recent rains. The average amount of fall seeding has been done, and it looks fairly well. Potatoes are of good quality, but the yield is below the normal. Celery is looking well, and other market-garden crops are below the normal. Apples are not half a crop; pears not a full crop; other fruits average. There has been no injury from frost as yet.

Stoneham (J. E. WILEY). — Very little Indian corn is raised. Rowen and fall feed are not up to the usual average. The usual amount of fall seeding has been done, and it is in good condition. Potatoes are a fair average crop in quantity and quality. Apples are a good crop; pears fair; peaches and grapes heavy. There has been no injury from frost.

Winchester (S. S. SYMMES). — Indian corn is not raised here. Rowen is still growing, and feed is getting better. The usual amount of fall seeding has been done, and it is in fine condition. Onions are a fine crop. Late potatoes are fine. The prospect is good for root crops, celery and other late market-garden crops. There are very few apples; peaches fine; no cranberries. The apple crop is the lightest in many years. There has been no damage from frost. The leopard moth is working in many sections of the town.

Weston (HENRY L. BROWN). — Indian corn is not much grown, but is well eared. There is a small crop of rowen, and feed in pastures is short. Seeding is late, on account of dry weather. Potatoes are below a normal yield, but of good quality. Roots are late, owing to dry weather, as are most other crops. There is a fair crop of fall apples, but very few winter apples; pears and peaches about normal. There has been no injury from frost.

Newton (G. L. MARCY). — Sweet corn is below an average crop. There is little rowen, but fall feed is good. Onions are not grown to any extent. Potatoes are below the normal in both yield and quality. Fruit of all kinds is below an average crop. There has been no injury from frost as yet.

ESSEX COUNTY.

Groveland (A. S. LONGFELLOW). — Corn is a very good crop. Rowen and fall feed are less than average crops. There has not been much fall seeding done this year, but it is in good condition. Onions are an average crop. Potatoes are a much better yield than was expected, and are of good quality. The prospect for root crops, celery and other late market-garden crops is very good. There is a small crop of apples; pears, peaches and grapes good. There is no damage from frost as yet in this section.

North Andover (PETER HOLT). — Indian corn is about a normal crop, but late. There is very little rowen, and fall feed has suffered from the dry weather. Not much fall seeding has been done, and that put in has not started well. There are some extra good crops of potatoes, and some total failures; perhaps a fair average, as a whole. All late crops have suffered from the drought. Apples are very light; pears fair; peaches good; grapes good, but late; cranberries injured by early frost. There has been a little damage from frosts.

Rowley (D. H. O'BRIEN). — Corn is a normal crop. Rowen and fall feed are 50 per cent of an average. The usual amount of fall seeding has been done, but it is backward in germinating. Onions are less than a normal crop. Potatoes are normal in yield, and above average in quality. Apples, 25 per cent of normal crop; pears and peaches, 50; grapes an extra crop; cranberries medium, having been badly damaged by frost. There was damage by frost on September 9 and 20.

Topsfield (B. P. PIKE). — Indian corn is three-fourths of a normal crop. Rowen and fall feed are not up to the usual average, not more than 25 per cent. About the usual amount of fall seeding has been done, but it is late. Potatoes are an average crop in yield and quality. The prospect is fair for root crops, celery and other late market-garden crops. Apples are 15 per cent of a full crop; pears, 50; peaches average; cranberries frosted; grapes average.

Hamilton (GEO. R. DODGE). — Indian corn is short of a normal crop at least one-third. The rowen crop is practically nothing, and fall feed is but little better. But very little fall seeding has been done, and it is yet too early to predict the result. Potatoes will average a two-thirds crop; quality, first rate. Root crops and late cabbage are below average. Apples and cranberries are very scarce; pears, peaches and grapes plentiful. A killing frost occurred September 19 and 20, damaging all vines, Lima beans and tomatoes.

Wenham (N. P. PERKINS). — Not much corn in this vicinity; what there is is very poor, and on some fields but few ears are ripening. There was no rowen to speak of, and but little feed in pastures. There was about the usual amount of fall seeding, but it starts slowly and is small. The majority of onion fields are below average in yield. Pota-

toes are of good quality, but the quantity varies with the locality. There is a fair prospect for root crops, except parsnips; not much celery grown. There are few apples; no pears, grapes or cranberries; but few peaches. There was some frost August 30 and 31, which spoiled most of the cranberries, and heavy frost September 20. Cows have to be fed at the barn, and are not very profitable.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES). — Indian corn is not raised here. Rowen and fall feed are below the average, owing to dry weather. The usual amount of fall seeding has been done, and it is below the normal in condition. The onion crop is below the normal. Early potatoes were nearly a failure; late ones about a two-thirds crop. The prospect for root crops, celery and other late market-garden crops is very good if showers continue. Apples poor; pears, grapes and cranberries good. There has been no injury from frost.

Avon (S. FRANK OLIVER). — Corn for the silo only is raised in this vicinity, and the condition of this is a little under the normal. Rowen, except on low lands, is a complete failure, owing to dry weather. Pastures need rain badly, and are in poor condition. Stock, unless fed in the stable, would surely suffer. Potatoes, while not a large crop, are of good quality and a fairly good yield. Beets and turnips look well; celery almost a complete failure, owing to lack of moisture. Apples and pears are not up to standard, and both begin to show the effect of the San José scale. No frost has been reported yet.

Norwood (FRANK A. FALES). — Corn is about 80 per cent of a normal crop. There is a light crop of rowen, and fall feed is about 30 per cent of the average. The late rains have helped the fall seeding, and the acreage is about an average. There is about 75 per cent of a normal crop of onions, rather small in size. Potatoes are about 60 per cent of the normal, and show some rot. Root crops, celery and late market-garden crops will be light. There are light crops of apples, pears and peaches; grapes good; cranberries light. There was quite a frost on low ground on September 19.

Westwood (HENRY E. WEATHERBEE). — Indian corn will be a fair crop, but it is about ten days late. Very little rowen will be cut, but fall feed will be good. The usual amount of fall seeding has been done, and it is looking well since the rains. Potatoes are a light crop, but of good quality. Root crops and celery will be very good. Apples, pears and peaches are light crops; grapes good; cranberries good, but small. There has been very little injury from frost.

Franklin (C. M. ALLEN). — Indian corn is a very light crop, with small ears, and will be mostly used for ensilage. Rowen and fall feed are not more than half the usual amount. But little fall seeding has been done, the dry weather preventing. Very few onions have been raised about here. Potatoes are an excellent crop, of good quality.

There will be average crops of celery, root crops and late market-garden crops, the showers having saved them. Apples are 50 per cent of a full crop; pears, 75; peaches, 90; grapes, 100; cranberries, 75. There has been no injury from frost. It is very dry, and water is very low.

Bellingham (JOHN J. O'SULLIVAN). — The corn crop will be heavier than usual. Rowen and fall feed are not up to the usual average, as it has been too dry. The usual amount of fall seeding has been done, but it is in poor condition. Very few onions are raised here. The prospect for root crops, celery and other late market-garden crops is fair. Apples and pears are poor crops; peaches fair; grapes good; cranberries poor, because of injury from hail. There was slight damage from frosts August 30 and 31.

BRISTOL COUNTY.

Mansfield (WM. C. WINTER). — Corn is somewhat under the normal. There is very little rowen, and fall feed is below the average. Very little seeding has been done. The prospect for root crops, celery and late market-garden crops is very poor indeed. Apples, pears and peaches are a light crop; grapes and cranberries good. We have had two or three light frosts. Late potatoes are still growing, and may be a fair crop; early potatoes reported generally light. Heavy rains are needed.

Attleborough (ISAAC ALGER). — Indian corn is about an average crop. There is no rowen, and not much fall feed. Not much fall seeding has been done, on account of dry weather. Potatoes are a small crop, but of fine quality. Fruits of all kinds are light. The cranberry crop suffered great damage from frost.

Berkley (ROLLIN H. BABBITT). — Indian corn is much below a normal crop, and many fields are an entire failure. Rowen and fall feed is not up to the usual average. There has been about the usual amount of fall seeding, but it has not made much progress. We shall have a very small crop of onions. The quality of potatoes is good, but the yield will be small. The prospect for root crops, celery and other late market-garden crops is not very good; turnips are a total failure. Apples fair; pears few; peaches few; grapes plenty; cranberries few and very small. There was a hard frost about the 1st of September, which injured many farm crops.

Westport (ALBERT S. SHERMAN). — Indian corn is below a normal crop. Rowen and fall feed are up to the usual average. On account of dry weather, very little fall seeding has been done. Onions are small, and below a normal crop. Potatoes are yielding a good crop, with very little rot. Root crops are looking well, but are backward, owing to the dry season. There has been no frost as yet. This is a very poor year for fruit of all kinds.

Acushnet (M. S. DOUGLAS). — There is two-thirds of a normal crop of corn. Rowen and fall feed are not up to the usual average. Less than the usual amount of fall seeding has been done, and it is in very poor condition. Onions are a two-thirds crop, and running small. Potatoes are a two-thirds crop, and of first-class quality. Root crops, celery and other late market-garden crops will be a failure without rain. Apples are half a crop; pears fair; peaches and grapes good; cranberries are more than a normal crop, although small. No frosts as yet.

PLYMOUTH COUNTY.

Norwell (HENRY A. TURNER). — Corn is about a normal crop. There is very little rowen, and pastures are short. There has not been as much fall seeding as usual, and it has been too dry for it to germinate. Onions are little raised in this section. As far as potatoes have been dug, they are about normal. Turnips are feeling the dry weather. Apples are very short; grapes and cranberries good. There is no injury by frost to speak of.

Hanover (HARRISON L. HOUSE). — There is about a two-thirds crop of Indian corn. Rowen and fall feed are rather short. Very little fall seeding has been done. There is about two-thirds of a crop of potatoes, of excellent quality. The prospect for root crops, celery and other late market-garden crops is fair. Apples are a fair crop; pears good; peaches good; grapes fair; cranberries extra good. There has been no damage from frost.

West Bridgewater (CLINTON P. HOWARD). — Indian corn is a good crop on moist land, and very light on dry fields. There is very little rowen worth mowing, and little fall feed. It has been too dry for grass seed to come up well, but the usual amount of seeding has been done. Onions are not up to an average crop. Potatoes are nearly an average crop, many fields yielding heavily. Celery is small. There will be a large crop of apples, pears, peaches and grapes. Frost the last of August injured the cranberry crop.

Hanson (FLAVEL S. THOMAS, M.D.). — Corn is less than an average crop. There is no rowen worth mentioning, and fall feed is poor. The usual amount of fall seeding has been done, and it is in fair condition. There are no onions worth mentioning. Potatoes are a small yield, but show no rot, and are smooth and not wormy. Root crops are average yields; celery not raised. Fruit is rather poor. There has been no injury from frost.

Halifax (Mrs. G. W. HAYWARD). — Corn is a fairly good crop, but is slow in ripening. Rowen and fall feed are not up to the usual average. There has been about the usual amount of fall seeding, and it is coming up well. Potatoes are good in quality, and a better yield than last year. Apples are a light crop; peaches, grapes and cranberries are good crops. There has been no frost to do injury as yet.

Plympton (WINTHROP FILLEBROWN). — Corn is backward, due to late planting and dry weather; but if frost holds off, the crop will be larger than usual. Rowen and fall feed are below the average. Not as much fall seeding has been done as usual, and what has been put in is suffering from dry weather. Onions are not raised to any extent. Potatoes as a whole are far better than usual. All fruits have suffered from lack of rain. We have had no frost to do any damage.

Rochester (GEO. H. RANDALL). — Early planted fields of Indian corn are normal; late planted have not eared well. There is very little rowen or fall feed. Not much fall seeding has been done, and it has not come up well, owing to dry weather. Onions ripened before half grown. There is not more than half a crop of potatoes, but they are of fairly good quality. Root crops are poor, and late market-garden crops in poor condition. Apples light; other fruits quite good; cranberries better than last year. There has been very little if any injury from frost.

BARNSTABLE COUNTY.

Bourne (DAVID D. NYE). — Indian corn is some two weeks behind last year's. Rowen and fall feed are not up to the usual average, owing to dry weather. There has been scarcely any fall seeding done. Potatoes are about half a crop. The prospect for root crops, celery and other late market-garden crops is poor, unless we have more rain and warm weather. Cranberries are the only fruit holding its own, but pears are very good, and we have some grapes. There has been no damage from frost. The weather continues very dry.

Falmouth (D. R. WICKS). — Corn is suffering from drought, but is a fair crop on moist land. There is no rowen this season, and pastures are all burned up. There will be but little if any fall seeding done. Onions are about half a normal crop. Potatoes are variable, some fields being good and others not worth digging; quality good. The prospect is very poor for root crops, celery and other late market-garden crops. Apples, pears, peaches are all good crops; also grapes and cranberries. No frost here as yet.

Dennis (JOSHUA CROWELL). — Indian corn is not over three-fourths of a normal crop. There is practically no rowen or fall feed. There is very little fall seeding done. Onions are very much below an average crop. Potatoes are of good quality; yield about 50 per cent. Root crops, celery and other late market-garden crops are much below the average. Apples are scarce; pears a fair crop; cranberries about average. There is no damage from frost. The season continues very dry. Cranberries are very unevenly distributed, but on the whole are about an average crop.

Eastham (J. A. CLARK). — Indian corn will be late maturing, making slow progress on account of drought. Rowen and fall feed are not up to the usual average. Less than the usual amount of fall seeding has been done, because of dry weather. Potatoes are a light crop.

The prospect is poor for root crops, celery and other late market-garden crops. Apples are a small crop; cranberries are doing well. There has been no damage from frost. Droughty conditions still prevail, and late crops are at a standstill.

Truro (JOHN B. DYER). — Very little corn is grown in this locality. Dry weather has nearly ruined the rowen crop, except on wet land. Very little fall seeding has been done. Potatoes are a poor crop, both early and late, and of poor quality. The prospect for late turnips is fairly good. Pears, peaches, grapes and cranberries are fairly good, but apples are very scarce. There has been no damage from frost.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Indian corn is below an average crop. Rowen is very poor, and fall feed is nearly all dried up. Not much fall seeding has been done. Potatoes are below average. The prospect for root crops, celery and other late market-garden crops is very poor. All fruits are poor crops except cranberries, which are fair. There has been no injury from frost.

BULLETIN OF
MASSACHUSETTS BOARD OF AGRICULTURE.

THE CULTURE OF THE PEAR.

By GEORGE T. POWELL, *Ghent, N. Y.*

The pear is one of the very desirable fruits, and one that is not produced in sufficient quantities to supply the demand for it. It is somewhat more difficult to grow than the apple, suffers under neglect, and hence it is not found on many farms, even in garden culture, in many instances. It will, however, well repay those who will select a suitable piece of land and plant pear trees, bringing to them the care they require. The tree is not as much subject to insect attack as the apple tree; but the pear blight is at times very hard to control, and causes heavy inroads upon orchards. It is only necessary to know the right conditions and to follow right methods, that this most excellent fruit, now mainly a luxury, may be grown with profit over a much wider territory.

THE SOIL.

The ideal soil for the pear is a clay loam. The temperature of such soil is somewhat lower than that of a more open or sandy character. The clay soil is more retentive of moisture, which is essential to the best development of the tree and fruit. If for want of sufficient moisture the pear receives a check in its growth, particularly in its early stages, it will not be so fine in quality; there will be more or less discolored specimens and unevenness in form, with roughness of skin, which is undesirable, and which lessens the value of the fruit for the best trade.

Pears will grow on a variety of soils, but they are not adapted to many of them, hence pear orchards are not successful in many places. While the soil needs to be well supplied with plant food, it should not contain too much nitrogen, as an over-luxurious growth of wood is subject to blight. If bearing trees, in addition to producing a full crop of fruit, make an annual growth of from 6 to 10 inches, they are in the best possible condition.

Many orchards are planted on sandy soil, and while under the best culture they often produce excellent fruit, the trees are shorter lived and are more subject to blight, because of higher temperature of the soil and from lack of moisture. The quality and character of the soil affect the quality of the fruit, which is indicated by the skin of the fruit. Where the skin is of a smooth, glossy character, with uniformity in the shape of the fruit, the highest quality is obtained.

The pear cannot thrive in a soil too retentive of water, and under-draining is one of the first operations to be performed with a clayey or heavy soil. According to the amount of water to be carried off, the drains should be laid from 30 to 60 feet apart, using tiles 4 inches in diameter, with collars, and laying them 3 feet deep. Drains are valuable not only for carrying off surplus water, but they aerate the soil by the air drawn into them. They also convey the humidity or moisture of the atmosphere to the soil in times of prolonged drouth, thereby aiding the growth of trees and other vegetation; hence they become equally valuable in wet and in dry weather.

PREPARATION OF THE LAND FOR AN ORCHARD.

The soil should be plowed as deep as may be done to make a loose condition for the roots of the trees when they are planted. A crop of corn or potatoes grown the first year will put the soil in the best condition for the trees, as the tillage required for these crops makes a most excellent preparation. If corn is grown, the sowing of 18 pounds of crimson and red clover seed per acre in equal parts on the last cultivation will make an excellent cover crop, to be plowed in the following spring. This will give good physical condition to the soil, and aid in conserving moisture for the trees the first year after planting.

PLANTING THE TREES.

Trees two years of age should be selected from the nursery, either in dwarfs or standards. At this age the trees have a good supply of roots, which are not so much reduced in digging as in older trees, and they will come into bearing as soon and sometimes sooner than older trees, which, from the loss of roots, require one or two years to become well started and established. The smaller trees cost less and may be planted in much less time than the larger size. For orchard planting, if of standard trees, 25 feet space should be allowed in each direction. Plant the trees 3 to 4 inches deeper than they stood in the nursery. Care should be taken to spread the roots well and have the earth well packed over them. The roots should be cut back one-third, leaving four branches well separated to form the tops of the trees. Where the winters are mild autumn planting may be done. Where the winter temperature reaches 20° below zero it is better to plant in the spring.

VARIETIES OF STANDARD TREES.

There are many varieties of pears, and it is difficult to recommend for different sections, because of the wide variations in soil and climate. The pear is not adapted to general cultivation, and one may travel over a large territory and not see orchards of this fruit. For those who contemplate or desire to plant pear trees, it is well to look over the locality and note whether there are any old trees there, and, if so, to ascertain the varieties that have done well, and then plant those varieties.

For market, plant but few varieties; a large quantity of one variety is much more valuable than a small quantity of several kinds. Very early pears are not profitable; few varieties earlier than the Bartlett make much profit.

Clapp's Favorite may be planted to a limited extent as a summer pear. It is a little larger than the Bartlett, is handsome in color, with a blush over a yellow skin. The fruit must be picked promptly and shipped as soon as it gets good size and color, as it decays at the core, which makes it a difficult pear to handle in any large quantity. Dealers do not like to handle this variety to any large extent, on account of the uncertainty of its soundness. The tree is vigorous in growth, while the fruit is good in quality, but not equal to the Bartlett. It should be picked eight or ten days before it ripens.

The Bartlett is the best pear, most universally grown and in greatest demand. It is medium to large in size, yellow in color when ripe, and is often covered with a handsome shade of delicate red on one side. It is exceedingly juicy and of fine flavor; very desirable for canning. The tree is a good grower. The Bartlett leads all varieties in demand.

The Seckel represents the highest excellence in quality. It is a russet and yellow, more or less covered with red when ripe. It is very fine and delicate in its flesh, and exceedingly sweet and juicy. The fruit is usually small in size. It always commands the highest price.

The Bosc is a variety of high quality; the fruit is large in size, russet in color, juicy and sweet, and finer than the Bartlett. The tree is a poor grower, both in the nursery and in the orchard. It will make a better tree by being top-worked on a stronger variety, like the Anjou or Keiffer. This is done by setting buds of the Bosc upon the stronger variety in August or September, or by grafting in the spring.

The Anjou is one of the most reliable market pears. The fruit is large in size, greenish yellow in color when ripe, and is of fine flavor. It may be kept in cold storage until after the holidays. The tree is strong in growth and is large in size. On account of the large size to which the Anjou tree grows, it is well to give it 20 feet space in one direction and 30 in the other. The tree is slow in coming into bearing, but when it does begin to produce, it is a regular annual bearer.

The Winter Nelis is a late variety of high quality. The fruit is green with a yellow tinge when ripe, and it is very juicy and sweet. The tree is a slow grower and needs good soil.

In a collection for home use the following would be desirable: for summer, — Osband's Summer, Gifford, Margaret, Tyson, Wilder's Early; for autumn—Flemish Beauty (this should be thoroughly sprayed with Bordeaux mixture, as it is subject to the pear scale; it is excellent), Hardy; for winter—Sheldon, Worden, Seckel, Vermont Beauty, Laurence, Winter Nelis. These are all of excellent quality.

Excepting the Bartlett, the Keiffer is planted more than any other variety. The tree is hardy and vigorous in growth. The fruit is always hard, and ships well. Its color is attractive when full matured, being yellow, covered mostly with red. As a dessert pear it is absolutely worthless. It is sold from the fruit stands in large quantities late in the autumn and winter, when other varieties are mostly gone; but it is most disappointing to purchasers, who are deceived by its very attractive appearance. Its chief value is for canning, for which it is used to an enormous extent. It is excellent in flavor when canned, its only defect being in a coarse, gritty core. Although the Keiffer sells for a less price than most other varieties, it has proved profitable to commercial planters.

DWARF TREES.

The cultivation of dwarf trees has not been very extensive in our country. There are but few commercial orchards of dwarf trees that have been a success. But few varieties seem to make a good union upon the Angers quince, which is used for dwarfing the pear. The Angouleme seems to be the best of the leading varieties for this purpose. The Angers quince is used for dwarfing pears because it is of slow-growing habit, and when the pear is budded upon its roots it also is slower of growth and becomes dwarfed in size. Quince cuttings about 7 inches long are planted in the soil, which root readily. In the summer these are budded with the pear buds, which grow and make the dwarf trees.

One of the reasons why dwarf pear culture has not been more generally adopted is because some of the best commercial varieties do not grow well on the quince root, but are more profitable when grown on standard trees. The standards require less pruning than dwarfs, and will do well with less cultivation; hence the dwarfs have been confined more largely to gardens where a few trees only are planted. Where the soil is rightly adapted and the higher care and culture required by dwarf trees is given, they are profitable, as has been demonstrated in some instances.

The Angouleme is especially well adapted to dwarfing. It is a large pear, yellow in color, somewhat coarse in its flesh, but of excellent

flavor. The tree makes strong growth, and is the best of all varieties for dwarf culture. It is much better as a dwarf than a standard.

The Anjou makes a good dwarf tree, but the fruit, growing to large size, drops heavily before the time for picking, and for this reason it is not profitable for commercial growing as a dwarf. The dropping of the fruit is a defect of the Anjou in either the standard or the dwarf trees.

The Seckel makes a good tree as a dwarf, and it is well to have it in a garden collection. It is better to be double-worked, budding it upon another variety. This is done by putting buds of the Seckel upon Angouleme or Anjou trees, which makes a better tree than when budded directly upon the quince.

The Louise Bon de Jusey is excellent as a dwarf. The tree grows to good size, while the fruit is large and of the best quality. The fruit is yellow and green when ripe, and often with a handsome blush. It is very juicy and has a slight astringency, which makes it particularly good for canning. This variety is not grown much in late years, but for dwarf culture it is one of the kinds that will return profits.

The Josephine is a pear of high quality, ripening in the autumn and early winter, grows well as a dwarf, and is a pear to be included in planting for market or for the home garden.

Winter Nelis is one of the finest early winter pears, but should be top or double-worked if grown as a dwarf.

DISTANCE TO PLANT DWARF TREES.

They should be planted 16 feet in both directions. Dwarf trees must have high culture; sufficient space should be given to allow a pair of horses to work between them at all times, and 16 feet is none too much. As the trees must be kept regularly pruned, this width between the trees will be sufficient to allow for cultivation, spraying and gathering the fruit. Planted at this distance, 172 trees may be set upon an acre.

In planting dwarf trees, the point of union between the pear and quince should be set 4 inches under the ground. If the union is above the ground, as is often the case, the trees will break at that point and they will be short lived. The deep planting will insure the trees from breaking when loaded with fruit, and they will live to be a century old. The bark of the pear stock may at any time in the spring be split in one or two places with a knife, and changed into a standard tree if desired. By this process roots will be found on the pear stock which will change its character to that of a standard. To hasten the process, after splitting the bark, making the cuts well down on the pear stock about 1 inch long in the form of a cross, turn up the corner of the bark and place a small wooden plug under it. Roots will be formed in a short time, that will extend out into the soil. At these points there will be a check in the movement of the sap that will result

in the formation of roots. As the trees are set at distances for dwarfs, this operation would not be desirable unless a portion of the trees were taken out.

CULTIVATION.

The cultivation of the soil is of the highest importance after the trees have been set, and this should begin with the planting and be regularly continued. When the trees begin to bear fruit freely, they do not make so vigorous growth; and when growth ceases, the tree will soon begin to decline, hence some fertilizer should be applied. In addition to bearing fruit, the trees should make an annual growth of from 6 to 10 inches; and to obtain this, annual tilling of the soil is necessary. Sod-bound trees will make little or no growth, and will produce but little and inferior fruit.

After the trees are planted, the soil should be harrowed and no crops grown. This will keep down weeds, and make the soil loose and in condition to retain sufficient moisture for the needs of the trees. The harrowing should be continued until the middle or last of July, by which time, after the trees begin to bear, the fruit will be well developed and will fill out to full size.

The soil should then have a cover crop to carry it over the winter without loss from the thorough tillage given. For this purpose clover is excellent, as it restores the nitrogen that is taken up by the trees and the fruit, while its roots and top hold and cover the soil during the winter, and prevent the washing away of fine soil, as also the nitrates that have been set free from the frequent summer tillage. A mixture of crimson and the common red clover seed, in equal parts, 18 pounds to the acre, is desirable to sow, as the former makes a quick autumn growth, while the latter will generally remain in the soil through the winter and spring. Both kinds add nitrogen to the soil while growing, and their roots aid in holding moisture after being plowed in the following spring.

As the pear tree needs constant tillage of the soil and does not withstand too much nitrogen, it is well to omit the clover cover crop for one or two years at a time, and substitute rye instead, which does not add nitrogen, as it has not the power or function of the clover plant to utilize the free nitrogen of the air. The rye when it is used should be sown at the rate of $1\frac{1}{2}$ bushels to the acre, and sown by the middle or the last of August. All cover crops should be plowed in early in the spring, or as soon as the soil is dry enough. If allowed to grow in the spring, cover crops take up the water from the soil very rapidly, and for this reason soil that has upon it cover crops may be plowed a week earlier than that which is naked.

The cost of the clover seed mixture would, one year with another, be about \$1.90 and the rye \$1.20 per acre. In some places, where August 1 would be too late to sow clover, winter vetch may be used.

The cultivation for standard and dwarf trees should be the same.

While it is quite generally considered that dwarf trees require higher culture than standards, the standards will give much more return for the higher culture when they receive it.

The growing of crops between the rows for three or four years, such as corn, potatoes, vegetables or strawberries, may be carried on, provided each crop is grown with fertilizers liberally used at the rate of 10 two-horse loads of rotted stable manure or 600 to 800 pounds of chemical fertilizer per acre. While this will produce some income during the time the trees are growing to the bearing period, it is not quite so good for the soil as the clover and rye system; but when the income is needed, the cropping with liberal fertilizing is admissible.

PRUNING.

This is an important part of the work of developing a pear orchard, and to do it properly requires a knowledge of the objects of pruning. These are: to give the trees right form; to stimulate growth, also to check it; to expose the foliage and fruit as much as possible to the sun, yet to so protect the body of the trees that they are not injured by the sun's rays; to check strong trees and to strengthen weak-growing varieties, — so that pruning means much more than cutting off a few branches at one time. It is applied to different parts of a tree, at different seasons and for different purposes.

But little pruning is required for standard trees after their form is once well established. They should be branched low, the lower limbs to be not over 2 feet from the ground. The tree should be trained in a somewhat pyramidal form, though after it reaches 12 feet in height the leader should be kept cut out, and the top spread, rather than have the trees grow high. If the tops are not pruned the trees will grow from 50 to over 60 feet high, which makes spraying and picking of the fruit difficult. Excepting pruning the tops of the trees after the side branches are well developed and balanced, but little annual pruning will be required, and this makes the standard trees more acceptable to most planters.

Dwarf trees require much more, and annual, pruning. They should be given a pyramidal form with a broad base, made by extending the lower branches and shortening in those above them. To develop fruit spurs close to the body of the tree, the annual growth should be pruned back about one-half. This should be done in July, when the growth is nearly made, which will check the flow of sap and distribute it more generally through the lower portions of the tree. Dwarf trees, from lack of judicious and timely pruning, are often allowed to grow too high. Occasionally a branch or two and sometimes a leader needs to be cut out of the tops to give the trees sufficient open form to allow the sun to reach all parts of the trees.

The form of the trees may be easily controlled by the manner of making the cuts upon the branches. If an upward growth is desired, the cut should be on the under side of a bud on the annual growth;

if a more spreading form is desired, the cut should be made on the upper side of a bud, — that is, on the under side of the branch. By following this method, either form of the tree desired may be produced.

Summer pruning needs to be done with judgment. Its effect is to produce fruitfulness, but it is by a checking process to the growth of a tree. As the trees begin to bear fruit freely there will not be so much growth of wood, when the pruning should be done more largely in the latter part of winter or early spring, when the trees are dormant. It is important to obtain some annual growth of wood upon trees that are bearing, as this indicates a thrifty and vigorous condition, one always desirable to maintain; and, in addition to cultivation and fertilizing, pruning becomes an important factor.

PEAR BLIGHT.

This is the most serious disease to which the trees are subject. It is caused by a microbe, which attacks the young growth and often the blossoms. The only remedy is to cut off all affected wood as soon as the disease shows, cutting several inches below the discolored parts. The spread of the disease is often from the old wood. The large branches will be affected, and it is shown in patches of dead bark. The most effective time to prune for blight is in the winter. All of the large branches that show the blight should be thoroughly treated; the bark should be shaved so far as these patches show, cutting out all affected parts, and disinfecting with sulphate of copper or diluted carbolic acid.

Blight has swept down the pear orchards so largely in all sections of the country, and particularly on the Pacific coast, that the supply of the fruit is now short, and prices are ruling high for it. Eternal vigilance, however, in cutting close and disinfecting, and particularly the winter pruning, will control the disease and save the trees to a large degree. Thorough spraying with the lime and sulphur or with some of the sulphur preparations will aid in keeping the trees and fruit free from fungous injuries.

INSECTS.

The pear is quite free from the many insects that prey upon other fruits. The codling moth has to be dealt with, and arsenate of lead, $1\frac{1}{4}$ pounds to 50 gallons of water, very thoroughly applied, will save over 90 per cent of the fruit. This should be applied as soon as the blossoms have fallen, and one very thorough spraying is sufficient.

The pear psylla is one of the most persistent enemies of the pear. It is periodical in its visitations, but often remains in orchards for ten to fifteen years by which time the trees are useless. Many die from the injury done in six or seven years.

By the use of the present power sprayers, and using one of the best of the soluble oils, — and there is nothing superior to Scalecide, — this pest may be entirely controlled. The oil will spread and work down in the axils of the leaves and on the stems of the fruit, where

the young psylla work, and will destroy them. We had 2,000 trees ruined after fourteen years of contest with this insect, working with a hand pump. Had a power sprayer been brought out at that time, the orchard could have been cleared of the insect in two years.

The San José scale flourishes on the pear, but it may be readily kept in check by the sulphur or oil spray, applied when the trees are dormant.

MARKETING.

The demand for pears is so great that there is little trouble to dispose of them in any market. A large foreign demand has grown up, and large quantities of Bartletts and Keiffers are exported annually.

Where pears are of fine or fancy quality, they should be wrapped in paper and shipped in bushel boxes. The boxes will cost 18 cents, but fruit well packed in boxes commands a much higher price than when shipped in barrels, provided the fruit is fine. In packing in boxes, the grading should be well done, so that an even number of pears may be packed, and the number stenciled on the box. This is of value to the buyer, who may know just what he will have to sell. Where there is uncertainty in regard to the number of pears in a box, the buyer will bid the lowest price.

To export pears, the boxes should have cushions made of paper and excelsior placed on the bottom and top of each box, as the fruit will keep tight and ship better. It is important that the pears reach the market in good condition, as when they become slack, bruised and wet they have to be sold at a much lower price.

Bartletts and later pears — the Bosc, Anjou, Seckel and Winter Nelis — may be held in cold storage for several weeks. For storing, the fruit should be shipped as soon as possible after it is picked and packed. Every day of delay in getting the fruit to the cold storage will shorten its keeping quality. For the most successful results in storage the fruit should be picked when fully matured, but not at all approaching ripeness. The right time for picking is when the pear will cleave from the fruit spur readily and without breaking the stem; at this time the finest quality will develop. The pear differs from most fruits, in that it is much better ripened off the tree; and if left on the trees to get too near the ripening point neither the quality of the pears nor their keeping in storage will be so good.

There is a large and growing demand for pears for canning, both in home and foreign markets, which gives a large outlet for the crop when grown on a large scale.

EASTERN MASSACHUSETTS SUPERIOR FOR PEARS.

There are few sections of our country where better pears are grown than in the territory for 40 miles about Boston. The soil and climatic conditions are most excellent, the trees thrive, and the fruit is of the best in every point of fine quality. Other sections of the State have good conditions for this fruit, and a pear industry may be built up that will have large financial value.

MASSACHUSETTS
CROP REPORT

FOR THE

MONTH OF OCTOBER, 1909.

THE FARM CENSUS FOR 1910.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, *Secretary.*

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER
UNDER ACT OF CONGRESS OF JUNE 6, 1900.

BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1909.

APPROVED BY
THE STATE BOARD OF PUBLICATION.

CROP REPORT FOR THE MONTH OF OCTOBER, 1909.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., NOV. 1, 1909.

Bulletin No. 6, Crop Report for the month of October, is presented as the final issue of the season. Our thanks are tendered to the corps of correspondents who have so faithfully made the returns to us, from month to month, which have enabled us to make up these records of the growing season. Their co-operation when the work is resumed in 1910 is looked for with confidence.

The special articles printed this year have been: Bulletin No. 1, "The farmer's interest in game protection," by Edward Howe Forbush; Bulletin No. 2, "Economy of labor in poultry keeping on farms," by John H. Robinson; Bulletin No. 3, "Live Stock in Massachusetts," by Prof. J. A. Foord; Bulletin No. 4, "Western methods in New England orcharding," by Prof. F. C. Sears; and Bulletin No. 5, "The culture of the pear," by George T. Powell. The supply of all these bulletins, except Bulletin No. 5, is exhausted, but we shall have reprints of the special articles next summer, and will send them to any who may desire it. The demand for the August bulletin was such that we felt obliged to reprint Professor Sears's article on "Western methods in New England orcharding" at once, and we consequently have an ample supply of this excellent essay on hand.

The article for this month does not deal with any farm crop or problem, but is none the less important. It is on "The farm census of 1910," by Whitman Osgood, Special Agent, Bureau of the Census, Washington, D. C. The importance of accurate statistics on farm property and crops cannot be overestimated. This article is printed with a view to enabling the farmers to prepare for the questions which will be asked by the enumerators in the spring of 1910, so

that the agricultural statistics for the next census may be the best and most accurate ever published. To this end we would bespeak a careful reading by those on our mailing list, and would ask each of them to bring the article to the attention of their neighbors as well.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture (Crop Reporter for October, 1909) estimates the average condition of the corn crop on October 1 to have been 73.8 as compared with 74.6 a month earlier, 77.8 in 1908, 78 in 1907, and 79.2, the ten-year average.

The preliminary estimate of the average yield per acre of spring wheat is 15.9 bushels, compared with 13.2 bushels, the final estimate in 1908, and 13.5, the average of the past ten years. The indicated total production of spring wheat is about 291,848,000 bushels, against 226,694,000, the final estimate in 1908. The quality is 90.5, against 88.1 in 1908, and 85.5, the average of the past ten years. The indicated production of spring and winter wheat combined is about 724,768,000 bushels, compared with 664,602,000 finally estimated last year. The quality of all wheat is 90.4, compared with 89.4 last year.

The average yield per acre of oats is about 30.3 bushels, as compared with 25 bushels finally estimated in 1908, and 29.4, the average of the past ten years. The indicated total yield is about 983,618,000 bushels, against 807,156,000 finally estimated in 1908. The quality is 91.4, against 81.3 last year, and 85.9, the ten-year average.

The indicated average yield per acre of barley is about 23.9 bushels, as compared with 25.1 bushels finally estimated in 1908, and 25.8, the average of the past ten years. The indicated total yield is about 164,636,000 bushels, against 166,756,000 finally estimated in 1908. The quality is 83.5, against 89.3 last year, and 87.4, the ten-year average. The average condition of buckwheat at time of harvest was 79.5, against 81.1 on September 1, 81.6 at harvest in 1908, and 82.4, the ten-year average condition at harvest.

The average condition of potatoes on October 1 was 78.8, against 80.9 last month, 68.7 in 1908, and 75.9, the ten-year average.

The average condition of tobacco at time of harvest was 81.3, against 80.9 last month, 84.1 at harvest time in 1908, and 83.1, the ten-year average condition on October 1.

The average condition of flaxseed at time of harvest was 84.9, against 88.9 on September 1, 81.2 at harvest time last year, and 83.2, the six-year average condition at harvest.

The average condition of apples on October 1 was 43.9, against 44.5 on September 1, 48.4 on Oct. 1, 1908, and 54.1, the ten-year average condition on October 1.

In Massachusetts the average condition of corn October 1 was 82; the average yield of oats 31 bushels, and the quality 92; the average condition of buckwheat 87; the average condition of potatoes 85; the average condition of tobacco 90; the average condition of apples 55; the average condition of grapes 90; the average condition of pears 72; the average condition of cranberries 72; the production of tomatoes compared with a full crop 88; the production of cabbages 86; the production of onions 86; the production of beans 81; the production of Lima beans 77; the production of water-melons 75; the production of clover seed 91; the production of millet for hay 86, and for seed 85; the production of Canadian peas 86 for grain and 84 for forage.

MASSACHUSETTS WEATHER, 1909.

[FURNISHED BY WEATHER BUREAU, BOSTON.]

January: The weather of the month was warmer than usual, the monthly mean temperatures ranging from 2° to 4° above. The maximum temperatures ranged from 52° to 65°, and occurred generally on the 6th. The minimum temperatures ranged from 20° above to 14° below zero, and were generally on the 19th. The rainfall was in excess of the average, with much of the precipitation in some sections in the form of rain. The total snowfall ranged from 3 to 18 inches. The month as a whole was mild.

February: Generally speaking January conditions continued, the departures ranging from 2° to 6° above the

normal. There were no marked maximum temperatures, but the minimums were somewhat high, ranging from 15° to 10° below zero. The snowfall was unusually light, varying from a trace to 14 inches. The monthly precipitation, rain and snow, was from 1 to 5 inches above the normal. At the close of the month the ground was generally bare of snow.

March: The weather was without marked departures from the normal for the month in temperature, both for minimums and maximums, but they were irregular, being slightly above in some sections and slightly below in others. The snowfall was light, generally less than 2 inches, and the total precipitation was also deficient.

April: The month was nearly normal in temperature, with maximums rather high, considerably above 80° in many sections. The monthly precipitation ranged from less than an inch to 3 inches above the normal. Spring floods on the rivers were common, and higher than usual, doing much damage to highways, bridges and dams.

May: The month opened with general rain and unseasonably low temperatures. There were alternate cold and warm periods, with the tendency toward minus departures from the daily average as a whole. The rainfall was light, the deficiencies ranging from 20 to 35 per cent over the State. There was an unusual prevalence of easterly winds, and a marked deficiency in sunshine. There was considerable fog in coast sections.

June: During the first ten days of the month there was much cloudy weather, with cool, easterly winds, the temperature being considerably below the normal. Heavy rains fell on the 5th and 6th, and cloudy weather, with frequent rain, occurred from the 10th until the 14th. The weather after the 20th was fair, with much sunshine, with day temperatures near 90° . The temperature was near the normal during the first half of the month and much above during the last half.

July: The weather for July was very pleasant, with an abundance of sunshine, temperatures somewhat below the seasonal average, and, except in a few localities, precipitation

below the normal. The nights were generally cool for July. At the close of the month there was general need of rain and in some sections droughty conditions prevailed.

August: Fair and generally clear weather opened the month, with general rains on the 4th, 5th and 6th, relieving but not breaking the drought. Until the 15th generally fair weather followed, with copious rains on the 16th, 17th and 18th, amounting to about 2 inches, followed by fair and generally clear weather for the rest of the month. The temperature during the month was generally below the average. The rainfall was not sufficient to make up the deficiency, but relieved the drought for the time.

September: There was an unusual prevalence of fair and sunny weather during the first three weeks, but with fairly well-distributed showers. The remainder of the month was unsettled, with much cloudiness and rain. The monthly precipitation was from 15 to 25 per cent above the September normal. The temperature was remarkably even, there being no abnormally warm or cold days. In some interior localities moderate to killing frosts occurred on two or three mornings. The winds were light and variable.

WEATHER OF OCTOBER.

The weather of October presented no unusual conditions in any of the several elements of temperature, precipitation, pressure or sunshine. The monthly mean temperatures over the State ranged near the seasonal average. The precipitation, while considerably below the average, was well distributed through the month.

The month opened with normal temperatures, but the weather became warmer by the 4th, and from this date to the 12th, inclusive, the daily mean temperatures ranged from 4° to 12° above the seasonal average. There was quite a marked drop in the temperature on the 13th, and the cool spell continued uninterruptedly till the 21st, with daily temperatures from 3° to 8° below the average. From the 16th to the 20th, inclusive, heavy to killing frosts were general, and in some localities the night temperatures ranged several

degrees below the freezing point. Through the remaining portion of the month the temperatures were generally normal to somewhat above.

During the first decade there was almost an entire absence of precipitation. Showers were quite general on the 11th and 12th, and again on the 15th, followed by several days of fair weather. A period of unsettled weather obtained from the 21st to the 24th, during which showers, with light to moderate amounts of rainfall, occurred. The weather during the rest of the month was generally fair and seasonable. The precipitation of the month was materially below the monthly average, the monthly amounts over the State ranging from 40 to 60 per cent below normal.

The weather of the month was marked by an abundance of sunshine, and the bright fall weather was very favorable to meadows, pasturage and to all outdoor pursuits.

CROPS OF THE YEAR.

Vegetation was fully up to the normal in May, but farm work was from a week to ten days behind, owing to unpleasant weather. Grass started slowly, but was reported thick at the bottom and promising well. Late seeding did not winter well. The fruit bloom was heavy, except for winter apples, and was not injured by frosts. Very little damage from insects was reported. Planting began early and progressed slowly, owing to unpleasant weather. Farm help was in fair supply, with wages about as in 1908, and relatively lower than in preceding years. There was a marked increase in the acreage of corn and a slight increase in that of potatoes. There was a slight decrease for tobacco and a slight increase for onions.

Insects were present in the usual numbers in June, with plant lice more than usually prevalent. The acreage of Indian corn was considerably increased, 86 out of 119 correspondents so reporting. The crop was planted late and was backward. A normal crop of hay was promised, except on old mowings, which had not recovered from the drought of last year. Potatoes were generally backward, but germinated and promised well; few early potatoes grown. Early market

garden crops were held in check by cool weather; asparagus a short crop; later market-garden crops promised well. Dairy products were in full supply, with prices the same, except for butter, where they were slightly increased. Dairy cows were short and bringing high prices. Feed in pastures was late in starting, but recovered and was in average condition. The strawberry crop was late; the berries bloomed full. Apples and pears bloomed light, and plums not more than average. Cherries generally good; cranberries backward and not in bloom.

There was less complaint of insects than usual in July. The corn crop was backward, but growing fast and promising well. The hay crop was uneven, probably three-fourths of a normal crop for the State as a whole, but it was generally secured in excellent condition. The usual acreage of forage crops was put in, corn being the favorite. Market-garden crops suffered somewhat from drought, but prices ruled above the average. Practically no potatoes had been dug. Apples promised a light crop; pears and plums rather light; peaches light; grapes generally very good; cranberries set well. Pasturage suffered severely from dry weather. Rye was a good crop in most sections. Oats were short and badly rusted. The interest in bee keeping seemed to be increasing.

In August corn promised an excellent yield, if it should mature, but was about two weeks behind the normal. There was little rowen, except on fertile, new seeded fields. Very few late potatoes had been dug, and a light crop was expected. There was no rot reported, but much blight. The acreage of tobacco showed a slight but general decrease; reports of condition were almost all favorable and cutting had commenced. Pastures suffered severely from drought, but were improved by the rains of the 16th and 17th. Apples were even lighter than anticipated; pears better than expected; peaches light; quinces a fair crop; grapes very good; cranberries small, but a good crop expected. Oats were short, but heading fairly well; barley little raised except for late forage, and not in good condition. Late market-garden crops were backward, and the acreage of celery seemed likely to be decreased.

Indian corn came forward slowly during September, but

an average crop was promised, barring immediate and killing frosts. There was very little rowen. The showers kept feed in pastures green, but there was little growth. Very much less than the usual amount of fall seeding was done, owing to drouthy conditions. That done in corn developed well, but other seeding germinated poorly and made slow progress. Onions were generally an average crop in the Connecticut valley, but late in maturing. The potato crop was considerably better than was expected, backward, but a fair average crop of good-sized tubers. Root crops were hardly normal, also celery, but improvement was expected. Late market-garden crops were checked by drought and not in very good condition. Apples a light crop and generally small in size; pears did well; peaches a good crop, better than anticipated; grapes generally a heavy crop; cranberries a light to medium crop on the Cape. There were several light frosts, but not much injury to the principal farm crops in any section.

In the circular to correspondents, returnable October 23, the following questions were asked:—

1. What is the value of the corn crop as compared with a normal crop?
2. Have root crops proved to be average crops?
3. What is the condition of farm stock?
4. What is the condition of fall seeding?
5. How have prices for crops raised for market compared with former years?
6. Which of the leading crops in your locality do you think have been most profitable?
7. Which of the leading crops in your locality do you think have been least profitable?
8. Considered as a whole, has the season been a profitable one for your farmers?
9. What is the effect of the drought on vegetation, streams, springs and wells?

Returns were received from 128 correspondents, from which the following summary has been compiled:—

VALUE OF THE CORN CROP.

The value of the corn crop is considerably under the normal in proportion to the acreage planted, especially for grain. Being planted late, it germinated well, but the growth was checked by drought and cool weather to such an extent that in many cases the ears did not ripen, in spite of the late dates of the first killing frosts. The portion of the crop grown for ensilage also was less valuable than usual, because of the undeveloped condition of the grain, as compared with its usual condition at time of cutting; but there seems to have been a good growth of stover in most cases. In the Connecticut valley the crop appears to be somewhat above the normal, but elsewhere in the State the conditions are as indicated above.

ROOT CROPS.

The warm weather and fall rains brought root crops along very rapidly, and they approximate closely to the normal in condition, only 26 correspondents considering them to have been below the normal, — a proportion much smaller than was indicated by preliminary reports. Potatoes, sometimes included in the class, proved to be much better than an average crop, — in fact, one of the most satisfactory on record for the State, as a whole. Prices ruled rather low for this crop.

FARM STOCK.

The drought of the summer and early fall made pastures very dry and short, many of them having practically no feed for a long period. This condition has been partially relieved by the fall rains, but they came too late for the growth of much feed in most pastures; therefore, young stock, usually kept in outlying pastures and without a grain ration, comes to the barn rather thin in flesh. Milch cows have been fed at the barn with both grain and hay since the middle of the summer, in most cases, and are in good condition both as regards flesh and flow of milk. Taking into consideration the short hay crop, the partial failure of forage crops, the

lessened value of ensilage and the very short rowen crop, it would seem as if there must be a decrease in many cases of the number of cattle carried through the winter.

FALL SEEDING.

Much less than the usual amount of fall seeding has been done, owing to the drought in the early fall, which made plowing and fitting of the ground out of the question in many locations. That which was put in is backward, having made a short growth, as a rule, but seems to have germinated well and to be in a thrifty condition. There are some complaints that that done later than usual is not in good condition. Seeding in corn seems to have given the best results this year, the shade of the corn crop being just what was needed to insure germination and to protect the young grass plants against the hot weather of early fall.

PRICES.

Prices average higher than usual, largely because of short crops. Fifty-five correspondents consider prices to have been higher than usual, 57 average and only 7 lower than usual. Milk, butter, eggs and meat, especially pork, have all commanded high prices throughout the year. Apples are bringing unusually high prices, owing to scarcity; and prices for onions and tobacco are reported as rather better than usual.

MOST PROFITABLE CROPS.

Fifty-one correspondents, less than a majority, consider hay to have been among the most profitable crops; 43, potatoes; 40, corn; 9, apples; 8, tomatoes; 7, onions; 7, tobacco; 7, cabbages; 6, sweet corn; 5, cranberries; 4, strawberries; 3, asparagus; 2, milk; 2, beans; 2, squashes; 1, butter; 1, root crops; 1, forage crops; 1, rye; 1, turnips; 1, fruit; 1, peas; 1, pears; 1, lettuce; 1, carrots; and 1, cauliflowers.

LEAST PROFITABLE CROPS.

Twenty-nine correspondents, an unusually small leading number, considered potatoes to have been among the least profitable crops, owing to low prices; 17, corn; 15, apples;

9, hay; 8, squashes; 7, oats; 6, beans; 6, tomatoes; 5, milk; 4, rowen; 4, cucumbers; 4, sweet corn; 3, root crops; 3, onions; 3, cabbages; 3, strawberries; 1, rye; 1, fruit; 1, buckwheat; 1, forage crops; 1, peas; 1, cauliflowers; 1, turnips; and 1, asparagus.

PROFITS OF THE SEASON.

There is a marked divergence of opinion as to the profits of the season, but the majority of the correspondents are against the view that it has been a profitable year. Among the reasons given are the drought, short crops, low prices, and the high price of grain and labor. Of the 124 correspondents answering this question, 2 say that the season was above the average for profit; 12, that it was an average season for profit; 56, that it was profitable; 16, that it was fairly profitable; 7, that it was below the average for profit; and 31, that it was an unprofitable season.

EFFECTS OF DROUGHT.

The drought of the summer and early fall seems to have had much less effect on vegetation than would be expected, though there is considerable complaint of damage to grass and grass roots. Crops were considerably shortened in many instances, but late crops recovered remarkably with the recent rains. Streams, springs and wells were very low at the time of making returns, and many of them were entirely dry, — some for the first time in the memory of the correspondent. The drought, following that of last year, has been unusually severe on the water supply; and the recent rains, while refreshing vegetation to a great extent, have had very little effect upon the underground supply. Much rain is needed, or farmers will be put to the inconvenience, in many cases, of drawing water for stock and domestic purposes through the winter.

NOTES OF CORRESPONDENTS.

(Returned to us October 23.)

BERKSHIRE COUNTY.

Alford (L. T. OSBORNE). — The corn crop is rather below the normal in value. Root crops have proved to be average crops. Farm stock is in better condition than usual, as pastures have been good. Fall seeding is in fine condition. Prices received for crops grown for market have been rather above the average. Corn and grass have been our most profitable crops. Having suffered but little from want of rain the season has been a profitable one. Streams are fairly well filled, but will need much more rain before winter sets in.

Tyringham (EDWARD H. SLATER). — The corn crop has proved to be about 80 per cent of a normal crop in value. Root crops have proved to be average crops. Farm stock will come to the barns in poor condition, owing to the dry season. Not much fall seeding has been done. Prices for market crops have compared favorably with other years. The hay crop has been our most profitable crop. Considered as a whole, the season has been a profitable one for our farmers. The drought has seriously injured vegetation; streams are very low and many springs and wells are dry.

Becket (WM. H. SNOW). — The corn crop is about four-fifths of the normal in value. Root crops have proved to be average crops. Farm stock is not in quite as good condition as usual, on account of dry weather. Fall seeding has not germinated well, owing to drought. Prices for crops are about average, with those for potatoes lower. Oats and potatoes have been our most profitable crops, and corn our least profitable one. Considered as a whole, the season has been a profitable one. Some streams, wells and springs are dry; pasturage is very short, and has resulted in a poor flow of milk.

Stockbridge (F. A. PALMER). — Indian corn is about 95 per cent of a normal crop in value. Root crops are full normal crops. Farm stock is in fine condition. Fall seeding is in good condition. Potatoes, hay and corn have been our most profitable crops, and oats our least profitable one. I think the season has been a profitable one for our farmers. Prices have been fully as high as in former years. The two dry summers of last year and this year injured the grass crop and many fields of potatoes were short and poor. Many springs and wells are dry.

Windsor (HARRY A. FORD). — Indian corn is 80 per cent of a full crop in value. Root crops have proved to be average crops. Farm stock is in good condition. Not much fall seeding has been done in this locality. Prices received for market crops are about equal to those of former years. Potatoes have been our most profitable crop, and apples our least profitable one. Considered as a whole, the season has been a profitable one. We have had enough rain for all crops except rowen; springs are in good shape now; streams and reservoirs very low.

Hinsdale (THOS. F. BARKER). — Indian corn is about three-fourths of the normal in value. Root crops are not average crops. Farm stock is in fair condition, but less will be wintered than usual. No fall seeding has been done about here. Prices for market crops are just about average. Potatoes have been our most profitable crop, and root crops and rowen our least profitable ones. Considered as a whole, the season is not over 75 per cent of the average for profit. Lack of rain has reduced all crops.

Washington (E. H. EAMES). — The corn crop is about the same as in former years in value. Root crops are good average crops. Farm stock is in good condition. Fall seeding is in good condition. Prices for crops raised for market are about the same as in former years. Potatoes have been our most profitable crop, and corn our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. The drought has not affected vegetation, but springs and streams are very low.

Cheshire (L. J. NORTHUP). — The corn crop compared with the normal is about 60 per cent in value. Root crops are average crops. The condition of farm stock will fall little short of being up to normal. Fall seeding is looking finely. Prices for crops have been well sustained. Corn has been our least profitable crop, and hay and potatoes our most profitable ones. As a whole, the season has been quite profitable. The drought injured vegetation; springs and streams are low and need much rain for winter purposes.

New Ashford (WALTER P. SMITH). — The corn crop is nearly average in value, but not as good as last year. Most varieties of roots, with extra care, have done well. Farm stock is in rather poor condition, owing to dry pastures. No fall seeding is being done. Prices for crops raised for market are a little higher than usual, owing to shortage. Oats have been our most profitable crop, and corn and potatoes our least profitable ones. The season has not been profitable, hardly a farmer having made expenses. A large rainfall is needed to fit us for winter.

FRANKLIN COUNTY.

Rowe (N. E. ADAMS). — The value of the corn crop is about three-fourths of the normal. Root crops are about half crops. Farm stock is in fair condition. Not much fall seeding has been done. Apples

bring \$2.50 and \$3 per barrel; potatoes 50 cents a bushel. Hay, potatoes and apples have been our most profitable crops, and corn our least profitable one. Considered as a whole, the season has been a profitable one. Vegetation has suffered from drought and wells and streams have been very low. Crops have been very uneven, and corn has not ripened on many fields. Apples are much better than was expected; about an average yield.

Charlemont (J. M. J. LEGATE). — Indian corn is about three-fourths of an average crop. Root crops are up to the usual average. Farm stock is in good condition. Early seeded fields look well; late seeding suffered from drought. Prices for market crops have been up to the average. Hay has been our most profitable crop, and corn, except for ensilage, our least profitable one. Vegetation has stood the drought better than would be expected; streams, springs and wells are low.

Conway (L. T. HOPKINS). — The increased acreage of Indian corn brings the crop above the average in value. Root crops have not proved to be average crops. Most farm stock is looking well. Fall seeding is looking finely, but was mostly done late. With but few exceptions prices for crops raised for market have been above the average. Hay and corn should, at present prices, be our most profitable crops. There is a wide difference of opinion as to least profitable crops; drought cut the rowen crop and worms the apple crop in neglected orchards. There need be no complaint as to the profits of the season. Streams and wells are low.

Whately (C. L. CRAFTS). — The corn crop is about normal in value. Root crops are up to the usual average. Farm stock is in very good condition. Fall seeding is in excellent condition. Prices for crops raised for market are better than usual. Onions and tobacco have been our most profitable crops, and cucumbers our least profitable one. Considered as a whole, the season has been a profitable one. The drought has not had any very disastrous effects.

Sunderland (GEO. P. SMITH). — Indian corn made a good growth, but there is more soft corn than common; value of crop 85 per cent of the normal. Root crops are not much grown. Farm stock is in fair condition, though cattle from pastures are a trifle thin in flesh. Fall seeding is in good condition. Prices for crops raised for market have been higher than in the last two years. Tobacco and onions have been our most profitable crops. The season has been more than usually profitable. Vegetation, springs, streams and wells are about normal at present.

Montague (A. M. LYMAN). — Indian corn is a good average crop and well cared. Root crops are fairly good. Farm stock is not quite up to the average in condition. Fall seeding is in very good condition; very encouraging for next year. On the whole, prices for market crops have been very satisfactory. Corn and hay for home use and tobacco for a market crop have been our most profitable crops; onions and cucumbers have been our least profitable crops. Considered as

a whole, the season is very satisfactory. The drought has not been severe about here.

Northfield (THOS. R. CALLENDER). — The value of the corn crop is about 30 per cent above the normal. Root crops have proved to be average crops. Farm stock is looking well. Fall seeding is in good condition. Prices for crops raised for market are rather above the average. Corn has been our most profitable crop, and sweet corn our least profitable one. The season has been a profitable one, owing to good prices for produce. The hay crop was somewhat injured by drought; also early potatoes; springs and wells low.

Erving (CHARLES F. CLARK). — The corn crop is of normal value. Root crops are up to the usual average. Farm stock is in good condition. Fall seeding is in good condition. Prices for crops raised for market are average. Corn, cabbages and hay have been our most profitable crops. Considered as a whole, the season has been fairly profitable. Vegetation has suffered from drought, and springs and wells have been very low.

New Salem (DANIEL BALLARD). — Indian corn is not much, if any, below a normal crop. Root crops are up to the usual average. Farm stock is in good condition. Fall seeding looks finely. Prices for crops raised for market have ruled a little higher than the average. Hay, corn, apples and potatoes have been our most profitable crops, and nearly all crops have been fairly profitable. Considered as a whole, the season has been a profitable one, though milk should have brought a higher price in summer. Fall feed and pastures were diminished by drought, and streams and wells are low.

HAMPSHIRE COUNTY.

Prescott (W. F. WENDERMUTH). — The corn crop is very nearly normal in value. Root crops have proved to be average crops. Farm stock is a little thin, owing to dry pastures. Fall seeding is in good condition, although not much has been done. Milk, cream and veal are our principal market products, and prices for these have been well up. Hay, fodder crops and corn have been our most valuable crops, and apples are more nearly a failure than for many years. The high price of grain has operated to keep down profits, but the year as a whole has been profitable. Vegetation is recovering slowly from drought, but much more rain is needed; some wells and springs are dry, while others are nearly so.

Enfield (D. O. CHICKERING). — Indian corn is about an average crop. Root crops are up to the usual average. Farm stock is in good condition. Fall seeding is looking well. Prices for crops raised for market are fully up to former years. Potatoes are our most profitable crop, and apples our least profitable one. Considered as a whole, the season has been a profitable one. Streams, springs and wells have been, and still are, very low.

Belchertown (H. C. WEST). — The crop of Indian corn is above the average in value as a whole. Root crops are average crops. Farm stock is a little off in condition, short pastures having told on them. Fall seeding is in fairly good condition. Prices for market crops are fully up, with quick sales. Corn, potatoes and silage crops have been most profitable, and hay and apples least profitable. There is no good reason for complaint regarding the profits of the season. Vegetation, streams, springs and wells are shorter than for years at this date.

Pelham (JOHN L. BREWER). — Indian corn is 90 per cent of a normal crop in value. Root crops are up to the usual average. Young stock, kept in outlying pastures, is in poor condition. Fall seeding is in average condition. Prices for crops raised for market are firm to bullish. Corn, rye, oats and turnips have been our most profitable crops, and hay our least profitable one. Considered as a whole, the season has not been profitable. We have not yet recovered from last year's drought, but few wells are now dry, and there is a fair volume of water in all streams.

Amherst (WM. P. BROOKS). — The corn crop is above the average in yield, as the fall was very favorable. Root crops are above the average; few raised here. Farm stock is in good condition. Fall seeding is in excellent condition. With the exception of cabbages and cauliflower prices have been fully average or above, notably for apples and squashes. Onions, tobacco and potatoes are our most profitable crops, and cabbages our least profitable one. The season has been profitable, yields having been good and prices quite satisfactory. There are no noticeable effects of drought; we have had fair fall rains. There is complaint that the supply of labor is insufficient.

Hadley (H. C. RUSSELL). — The corn crop is average in value. Farm stock is in good condition. Fall seeding is in good condition. Prices have been high for market crops, onions selling at 45 to 50 cents per bushel and tobacco from 3 to 4 cents per pound higher than last year. Onions have been a bumper crop, and our most profitable one; potatoes have been our least profitable one. Considered as a whole, the season has been a profitable one. Vegetation looks well, but streams are low.

Easthampton (WILLIAM C. CLAPP). — Corn was late, but the frost held off so long that it was about normal. Root crops have proved average yields. Farm stock is in good condition. Fall seeding has improved with the fall rains and is now looking well. Prices have been about the same as in other years. Tobacco promises to be a profitable crop; also corn, hay and potatoes. Considered as a whole, the season has been a profitable one. Most springs, streams and wells are up to the normal. Sweet corn not as plenty as usual and higher in price; tomatoes very plenty and cheap; watermelons suffered from drought; apples not half a crop; eggs short and high.

Southampton (C. B. LYMAN). — Indian corn was a full average crop, with an increased acreage. Root crops have given average yields.

Farm stock is looking fairly well. Fall seeding is in very good condition. Prices for crops raised for market have been higher than usual, and the sale more ready. Hay is always the leading crop, and tobacco, corn and potatoes have been profitable. The season has been fairly profitable, nothing to boast of. Vegetation suffered from drought, and springs, streams and wells are low.

Westhampton (LEVI BURT). — Root crops have given average yields. Farm stock is in poor condition as a rule. Fall seeding is in excellent condition. Prices for crops raised for market have been normal. Corn and potatoes have been our most profitable crops. As a whole, the season has been profitable, with good crops of corn and potatoes and a fair crop of apples and other fruits. Vegetation has not suffered to any extent from drought, but springs, wells and streams are very low.

HAMPDEN COUNTY.

Blandford (ENOS W. BOISE). — The corn crop is three-fourths of a normal crop in value. Root crops are not up to the average. Farm stock is in fair condition. Hardly any fall seeding was done on account of drought. All that farmers have had to sell has brought extra good prices. Grass has been our most profitable crop, and corn, on account of not ripening, our least profitable one. Considered as a whole, the season has been a profitable one. Vegetation is short, and streams very low because of drought.

Russell (E. D. PARKS). — Indian corn is fully up to the average in value. Root crops have given average yields. Farm stock is about average in condition. Fall seeding is in very good condition. Prices for market crops have been up to the average. Hay and potatoes have been our most profitable crops. Considered as a whole, the season has been quite profitable. Water has been quite low all the season, and we need rain before the ground freezes.

Agawam (J. G. BURT). — The corn crop is fully up to the average in value. Root crops have proved to be average crops. Farm stock is in good condition. Fall seeding is in good condition. Prices for market crops are about the same as last year. Hay and corn have been our most profitable crops, and oats and onions our least profitable ones. I think this has been a profitable season. Vegetation has suffered from drought, and some springs and wells are dry.

Chicopee (E. L. SHAW). — Indian corn is a little below the normal in value. Potatoes are above average, also other roots. Farm stock is in fairly good condition. Fall seeding is generally good. Prices for crops raised for market are slightly higher than usual. Corn has been our most profitable crop, partly on account of high cost of grain, and oats our least profitable one. Considered as a whole, the season has been a profitable one. The hay crop was cut by drought and rowen was very light; streams have been low, but there is no shortage of water for stock or home use.

Ludlow (CHAS. B. BENNETT). — The corn crop is fully up to the average. Root crops are much better than usual. Farm stock is in very good condition. Fall seeding is in fair condition. Prices for market crops have been much higher than usual. Potatoes and corn have been our most profitable crops, and apples our least profitable one. The season has been better than an average one for profit. Early potatoes and rowen were very light because of drought; nothing else suffered. Streams and wells are low, but frequent showers have kept vegetation in good condition. Turnips will be the best crop in years.

East Longmeadow (JOHN L. DAVIS). — The yield of Indian corn is average and the value more than normal, on account of price. Root crops are average yields. Farm stock is not in first-class condition. Fall seeding is in good condition. Prices have been good. Potatoes and corn have been our most profitable crops, and with some, potatoes have also been their least profitable one. The season has been a profitable one for mixed farming; fruit and berry men had a poor season. Wells are quite low, as are streams and springs. The drought made much fruit fall before ripe.

Wilbraham (HENRY M. BLISS). — The corn crop is 90 per cent of the normal in value. Root crops are nearly normal crops. Farm stock is in good condition. Fall seeding is in fair condition. Prices have been 10 per cent better than usual for market crops. Corn, grass and potatoes have been our most profitable crops; apples, oats and rowen our least profitable ones. The season has not been profitable as a whole. Drought injured vegetation, and streams, springs and wells are very low, causing much inconvenience. The peach crop was very large, something over 50,000 baskets in town, while other fruits were light.

Monson (F. D. ROGERS). — Indian corn shows a good growth of fodder, but did not ear as well as promised. Root crops are giving average yields. Farm stock is in good condition. Not much fall seeding has been done and most of it is late. Prices for crops raised for market have been slightly higher than usual. I think the season has been profitable, because good prices have made up for light yields. Drought has cut the yield of most crops, and streams and springs are very low.

Holland (A. F. BLODGETT). — The corn crop is above the normal in value. Root crops are rather above the average. Farm stock is in very good condition. Fall seeding is in fair condition. Crops raised for market bring somewhat higher prices than usual. Corn is the most profitable crop with us, and buckwheat and early potatoes the least profitable. Considered as a whole, I think the season has been a profitable one. Drought has injured crops somewhat, and very many springs and wells are entirely dry.

WORCESTER COUNTY.

Brookfield (F. E. PROUTY). — The corn crop is about three-fourths the normal in value. Root crops are up to the usual average. Farm stock is in good condition. Fall seeding is in fair condition. Prices for crops raised for market are about average. Hay has been our most profitable crop, and potatoes our least profitable one. Considered as a whole, the season has hardly been an average one for profit. Streams, springs and wells are all quite low.

North Brookfield (JOHN H. LANE). — Indian corn is 80 per cent of a normal crop in value. Farm stock is in fair condition. Fall seeding is in poor condition, owing to drought. Prices for market products have been fully up to the average. Potatoes have been our most profitable crop, and apples our least profitable one. The season has been fairly profitable, as prices are a little above the normal for some things. Streams, wells and springs are very low and many dry. The effect of the drought is likely to be felt for years on grass and trees.

Barre (JOHN L. SMITH). — The corn crop is 10 per cent above the normal in value. Root crops do not give average yields. Farm stock is thin as a rule. Fall seeding is small and backward. Prices for market crops have been above the average. Not many crops are raised for sale, mostly grown for stock feeding. Considered as a whole, the season is about average for profit, though help and grain have been high. Vegetation has stood the drought much better than one would expect, but has suffered severely; many springs and wells have failed and are all low.

Petersham (B. W. SPOONER). — Including the fodder the corn crop is more valuable than usual. Root crops are about average. All stock is in good condition. Very little fall seeding has been done, but it is looking well. There has been an advance in price for most crops. Corn and potatoes have been our most profitable crops, and beans our least profitable one. As a general thing farmers are not complaining, and all hope to live through the winter. At present the streams, springs and wells are all showing the effects of drought more than vegetation.

Templeton (LUCIEN GOVE). — Indian corn is four-fifths of a normal crop in value, owing to the drought, low temperature and early frosts. Root crops are average, with the exception of turnips, which are small and of poor quality. Farm stock is rather poor in flesh. Fall seeding is rather below the average. Prices have been somewhat better than for several years. Hay, corn, potatoes, cabbage, asparagus and tomatoes have been our most profitable crops, and apples, milk and squashes our least profitable ones. The season has most decidedly not been profitable, drought and light crops the cause. Streams, springs and wells are very low, and vegetation is seriously injured by drought. Two years will be needed to bring the fields and pastures back to normal condition.

Gardner (W. E. KNIGHT). — Indian corn is three-fourths of a full crop. Root crops are not grown about here. Farm stock is in fair condition. Fall seeding looks fairly well. Prices for market crops have been higher than usual. Potatoes have been our most profitable crop, and grass our least profitable one. Considered as a whole, the season has been a profitable one. Pastures are short, streams very low, and many wells are dry.

Ashburnham (E. D. GIBSON). — For grain corn is half the normal in value and three-fourths for the silo. Root crops are hardly average, on account of drought. Farm stock is in fair condition, but a little thin in flesh. Not as much fall seeding as usual has been done and it did not start well. Prices for crops raised for market have been as good as in any recent years. Potatoes are a better crop than anticipated and as profitable as any. Hay and forage crops were unsatisfactory. The season has not been profitable, grain has been very high and farmers have been obliged to feed a great deal because of drought. Streams, springs and wells are very low. Grass will enter the winter in more favorable condition than last year.

Princeton (A. O. TYLER). — Indian corn is two-thirds a normal crop in value. Root crops are giving average yields. Farm stock is in fair condition. Fall seeding is in good condition. Prices for crops raised for market have been lower than usual. Corn and potatoes have been our most profitable crops, and cabbages our least profitable one. Considered as a whole, the season has been fairly profitable. Vegetation was injured to some extent by drought; streams and springs are very low and many wells dry.

Bolton (H. F. HAYNES). — The corn crop is 80 per cent of the normal in value. Root crops are not average. Farm stock is in good condition. Fall seeding is generally good. There have been fair prices for all crops. Potatoes have been our most profitable crop. Considered as a whole, I think the season has been a profitable one. Many wells are dry, also small streams, but crops have been fairly good. Apples have been poor.

Northborough (JOHN K. MILLS). — The corn crop is nearly normal. Root crops are quite a little above the average. Farm stock is looking well. Fall seeding is in good condition. There has been but little change in the prices of market crops, except that potatoes have sold lower than usual. Asparagus, strawberries, hay, corn, potatoes and apples have been our most profitable crops, and cabbages, oats, tomatoes, squashes, beans and peas our least profitable ones. The season has been an average one for profit. Streams are very low, wells and springs that were never known to fail before are dry.

Southborough (E. F. COLLINS). — The corn crop is about an average. Farm stock is in good condition. Fall seeding is not up to the average on account of dry weather. Prices of crops raised for market have been good, much better than last year. Hay, corn, tomatoes and apples have been our most profitable crops. I think farming grows

more profitable every year in this vicinity. Vegetation looks very well, in spite of drought.

Leicester (H. H. KINGSBURY). — Owing to failure to mature corn is not more than 75 per cent of the normal in value. Root crops are generally good. Farm stock has generally been fed in the stable and is in fair condition. Only a limited amount of fall seeding has been done, which is in good condition. The hay crop has been our most profitable one, and the production of milk our least profitable line of work, some dairies showing a positive loss. The items of taxes and help, combined with a season of low temperatures and drought, have reduced farm profits to a minimum. Streams and ponds are low; many springs and wells are dry and have been so for months.

Auburn (WM. GILBERT). — Corn is about 5 per cent below the normal in value. Roots are an average crop, but rutabagas and cabbages have been injured by plant lice. Farm stock is thin in flesh. Fall seeding looks well. Prices for farm crops have been higher than usual. Cabbages have been our most profitable crop, and potatoes our least profitable one. The season has been too dry to be profitable to the farmer. The drought has hurt vegetation; streams, springs and wells are either very low or dry.

Mendon (J. J. NUTTER). — The corn crop is fully up to the average. Root crops are about the same as usual. Farm stock is in very good condition. Fall seeding is in good condition. Prices for crops raised for market are fully up to former years. Hay and corn have been our most profitable crops. The season has been as profitable as common, but not really profitable, the prices of everything the farmer buys being very high. Crops have suffered in some sections on account of drought, and springs and wells are low.

MIDDLESEX COUNTY.

Hopkinton (W. V. THOMPSON). — The corn crop is a little above the normal in value. Roots are little raised, and have suffered from drought. Farm stock is in good condition, except that pastured, which is thin. Fall seeding is in good condition. Prices for market crops are fully up to the average. Corn and ensilage have been our most profitable crops, and hay our least profitable one. Considered as a whole, the season is hardly as profitable as usual. Springs and wells have been and still are dry.

Marlborough (E. D. HOWE). — The corn crop is 90 per cent of the normal in value, not being fully ripened. Root crops are up to the usual average. Farm stock is in good condition. Not much fall seeding has been done, as it has been too dry. Prices for market crops have been a trifle higher than usual, due to scarcity. Small fruits have been our most profitable crops, and milk our least profitable product. There is a very marked decrease in vegetation, owing to drought, and wells and streams are very low.

Maynard (L. H. MAYNARD). — Indian corn is fully up to the average in quantity and quality. Root crops are average yields. Farm stock is in good condition. Fall seeding is in good condition and up to the average. Market crops as a whole have brought good prices. The corn crop is very good, and the second crop of hay was very good, though the first was short. Onions were a failure this season. Considered as a whole, the season has been a profitable one. Streams, springs and wells are low, but not quite as bad as a year ago; vegetation does not appear to be suffering.

Townsend (GEO. A. WILDER). — The corn crop is an average one in value. Root crops are up to the usual average. Farm stock is in good condition. Fall seeding is in good condition. Prices for crops raised for market have been higher than usual. Potatoes have been our most profitable crop. Considered as a whole, the season has been a profitable one. Wells are rather low.

Dunstable (A. J. GILSON). — The value of the corn crop is below the normal. Root crops are generally well up to the average. Farm stock as a whole is in good condition. Fall seeding is doing well. As a whole, the prices of farm crops have been about the same as in former years. The hay crop is considered the most profitable. Owing to drought the corn crop has not been as profitable as was expected. The season has been about the same as usual for profit. The drought has retarded vegetation; the streams are filling up slowly, while springs and wells are lower than at any time this season.

Carlisle (W. A. CLARK). — Indian corn is generally a good crop, though some fields did not mature. Root crops are above the average. Farm stock looks well. Not much fall seeding was done, owing to the pressure of other work. Prices for farm crops are somewhat better than an average. Cabbage, sweet corn and potatoes are our most profitable crops, and tomatoes and beans our least profitable ones. Considered as a whole, the season has been a profitable one. All streams are dry and some wells, but not as much so as last year.

Billerica (E. F. DICKINSON). — Indian corn is about a three-fourths crop in value. Root crops are average crops. Farm stock is in good condition. Fall seeding is in excellent condition. Prices for crops raised for market have been low. Early vegetables, hay and apples have been our most profitable crop, and strawberries and late vegetables have been our least profitable ones. The season has been a fair average one for profit; crops good and prices low. Locally we have escaped serious damage from drought.

Tewksbury (G. E. CROSBY). — The corn crop is the most valuable for years. Root crops are giving average yields. Farm stock is in good condition. Fall seeding is in good condition. On the whole, the prices for farm crops are rather better than some years. There is such a variety of crops grown that it is impossible to pick out the most and least profitable. Considered as a whole, the season has not been above the average for profit. Vegetation suffered for a time from drought, and streams, springs and wells are still low.

Concord (WM. H. HUNT). — The corn crop is a little below the normal in value. Root crops are up to the average. Farm stock is in good condition and average health. Fall seeding has got a good start, but does not seem to grow as fast as it ought. Farmers have no reason to complain of the average prices received. Apples and pears have sold high, but they are short crops; asparagus is, on the whole, perhaps our most profitable crop. I should say that the season had been a profitable one. Some crops on light lands suffered from summer drought, but we have had abundant fall rains. Ponds and deep springs are still very low, having been so for a year and a half.

Winchester (S. S. SYMMES). — Indian corn is not raised here. Root crops are giving average yields. Farm stock is in good condition. Fall seeding is in fine condition, never better. Prices for late market-garden crops are very low. Sweet corn has been our most profitable crop, and cauliflower our least profitable one. Considered as a whole, the season has not been a profitable one. Many brooks are still dry, but springs and wells have plenty of water now. Late rains brought all market-garden crops forward in good shape. Help has become very scarce.

Weston (HENRY L. BROWN). — Mangolds and beets are average crops; turnips need two weeks' growth. Fall seeding is looking well. On the whole, prices for market crops have been about average. Early cabbage and all second early sold well and were profitable; sweet corn was fairly profitable most of the season. Beans and squashes have been our least profitable crops. Considered as a whole, the season has not been a profitable one. Drought injured planted crops and rowen; springs and streams have been very low and deep wells are still so.

Newton (G. L. MARCY). — Corn has not been up to the average in value. Root crops are not giving average yields. Farm stock is in good condition. Prices have been high for crops raised for market. Hay and corn have been our most profitable crops, and potatoes our least profitable one. Considered as a whole, the season is below the average for profit. The Charles River is very low for the time of year. The last three years have been very dry, but the drought this year seemed to be harder on vegetation.

ESSEX COUNTY.

Salisbury (WESLEY PETTENGILL). — The acreage of Indian corn was nearly twice as great as usual, and the value of the crop is 40 per cent greater. Root crops are good average yields. Farm stock is looking well. The rains and warm weather have brought fall seeding along nicely and it is looking well. Prices have been good for farm crops. Hay and corn have been our most profitable crops. Considered as a whole, the season has not been as profitable as some years, on account of a light crop of apples. The drought has hurt our pastures and grass lands somewhat; wells have been low and some are dry, but streams and springs are improving.

Groveland (A. S. LONGFELLOW).—The corn crop is up to the average in value. Root crops are full average crops. Farm stock is in good condition. Fall seeding is good on early seeded land. Rather higher prices have prevailed for crops raised for market than usual. Corn, potatoes and tomatoes are our most profitable crops, and squashes and strawberries our least profitable ones. Considered as a whole, the season has been profitable because of increased prices. Vegetation is in good condition, but springs and wells are low.

Andover (MILO H. GOULD).—The corn crop is a little below the average, on account of drought. Root crops are up to the usual average. Farm stock is in very good condition. Fall seeding is in good condition. Prices for crops raised for market are above the average. Sweet corn and early cabbage are our most profitable crops, and squashes and tomatoes our least profitable ones. Considered as a whole, the season has been a profitable one. Vegetation has been kept up by short rains, but streams and springs are low.

Rowley (D. H. O'BRIEN).—The corn crop is above the normal in value. Root crops are giving average yields. Farm stock is in fair condition. Fall seeding is in good condition. The prices for crops raised for market are about the same as usual. Potatoes and corn are our most profitable crops, and tomatoes our least profitable one. Considered as a whole, the season has been a profitable one. The drought seems to have had little effect. The weather conditions have been extra good for farm work this fall.

Topsfield (B. P. PIKE).—The corn crop is 75 per cent of the normal in value. Root crops give fairly good yields. Farm stock is in average condition. Fall seeding is late, but is looking well. The prices for crops raised for market are about the same as usual. Milk and potatoes have been our most profitable products, and apples our least profitable one. The season is not up to the average for profit. Springs are low, and grass land and pastures very short.

Wenham (N. P. PERKINS).—Corn is not much raised, but was almost a total failure. Root crops have grown considerably the last month, so that the prospect is for a normal crop. Milch cows have been fed at the barn and are in good condition. Early sown fall seeding is looking well, that sown later has failed to get a good start. Prices for market crops are about the same as last year. Squashes and carrots have been our most profitable crops, and sweet corn and milk have been unprofitable. At present the season is not a profitable one, but with a good winter market it may be fairly profitable. Vegetation suffered much during July and August, and water for cattle was scarce, but there is plenty now.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES).—Corn is not raised here. Root crops are average crops. Farm stock is in good condition. Fall seeding is in good condition. Prices for crops raised for market have

been lower than usual. Beans and cauliflowers have been our most profitable crops, and potatoes our least profitable one. Considered as a whole, the season has not been profitable. Springs and wells have been very low until the fall rains, and drought did a great deal of damage to early and medium early crops.

Stoughton (CHARLES F. CURTIS). — A fair value of the corn crop is 40 per cent of the normal. Root crops have proved to be almost average. Farm stock is in good condition. Fall seeding is in the best of condition. Prices for crops are fully up to the average. Hay has been our most profitable crop, and Indian corn, whether for silo or grain, the least profitable. The past season has been a losing one for farmers. There is no rowen, streams are low, and more wells dry, or nearly so, than for thirty years.

Canton (EDWIN V. KINSLEY). — The corn crop is 90 per cent of the normal in value. Roots are proving to be average crops. Farm stock is in good condition. Fall seeding is in good condition. Prices for market crops have been variable, but a fair average. Tomatoes have been our most profitable crop. I could not say what crop has been least profitable; several have not done well. The season is not a fair average for profit, some farmers having done well and others not so well, according to soil and cultivation. Vegetation has overcome the effect of drought, but wells and streams are very low.

Walpole (EDWARD L. SHEPARD). — The corn crop is 50 per cent of the normal in value. Root crops are not up to the average. Fall seeding is a little below normal. Prices for crops raised for market are a little higher than usual. Hay has been our most profitable crop, and corn and potatoes our least profitable ones. Considered as a whole, the season has not been a profitable one. Vegetation is reduced one-half by drought, and streams, springs and wells are very low.

Millis (E. F. RICHARDSON). — The corn crop is 75 per cent of the normal in value. Root crops are about 60 per cent of the average yield. Farm stock is in excellent condition. Fall seeding is improving and is now in fair condition. Prices for crops raised for market are higher than usual. Apples, hay and potatoes have been our most profitable crops, and corn our least profitable one. Considered as a whole, the season has been a very fair one for profit. Vegetation, streams, springs and wells are much in need of heavy rains.

Bellingham (JOHN J. O'SULLIVAN). — The corn crop is about normal in value. Root crops are up to the usual average. Farm stock is in good condition. Fall seeding is in fair condition. Prices for crops raised for market have been higher than usual. Hay has been our most profitable crop, and potatoes our least profitable one. Considered as a whole, the season has been a profitable one. The effect of drought on vegetation, streams, springs and wells has been severe.

BRISTOL COUNTY.

Mansfield (WM. C. WINTER). — Indian corn is less than a normal crop, just how much less is uncertain. Root crops are below the usual average. Farm stock is in good condition. Little fall seeding was done and it is backward. Prices for farm crops average about normal. Hay has been our most profitable crop, and it is uncertain which crops have been least profitable. I should say that the season had not been profitable. The drought has had a bad effect on vegetation and the water supply. Rains in September greatly improved pastures and late vegetables, but had little effect on streams and wells.

Seekonk (JOHN W. PECK). — Corn is mostly raised for silage; value for grain 75 per cent of the normal. Root crops are average, having grown wonderfully since the rains. Farm stock is looking well, considering the long drought. Fall seeding has not made as good a growth as some years, but is looking well. Prices have been better than were expected, but are now declining. Early cabbages were our most profitable crop, and potatoes our least profitable one. The season has been a profitable one, owing to good prices. Many crops were so retarded by drought that they did not mature in time to escape the frosts. Springs and wells were the lowest ever known and are still low.

Dighton (HOWARD C. BRIGGS). — Indian corn is 33 per cent of a full crop in value. Root crops are not up to the usual average. The condition of farm stock is average. Fall seeding is in good condition on low lands, but is poor on high lands. Prices for market crops have been a little better than the average. Strawberries and tomatoes have been our most profitable crops, and potatoes our least profitable one. Considered as a whole, the season has not been profitable. Streams, springs and wells are very low or dry; vegetation shows the effects of drought very plainly.

Swansea (F. G. ARNOLD). — Many fields of corn are a total failure, on account of dry weather, but the crop will average from 35 to 40 per cent of a normal. Beets are good, carrots fair and turnips a failure. Farm stock is in good condition. Fall seeding is good but late. Prices for crops raised for market are about the same as usual. Late potatoes and late tomatoes have been our most profitable crops, and corn and early potatoes our least profitable ones. I do not consider the season a profitable one. Wells are the driest ever known; streams and springs are low; pastures gave out early, and many farmers have fed stock at the barn since July.

Berkley (ROLLIN H. BABBITT). — Indian corn is rather below a normal crop. Root crops have not proved to be up to the average and are almost a failure. Farm stock is in fairly good condition. Fall seeding is rather backward, but is coming forward nicely since the rains. Prices for market crops are good, but the yields are small. Tomatoes have been our most profitable crop, and potatoes our least

profitable one. Considered as a whole, the season has not been a profitable one. Many wells and springs are dry now, and nearly all crops have been cut short by drought.

Westport (ALBERT S. SHERMAN). — Root crops are small on account of dry weather. Farm stock is generally looking well. Fall seeding was put in late, but is now doing well. Prices for market crops have been fair, not much change from former years. Hay has been our most profitable crop, and oats our least profitable one. The year has been a hard one for farmers. The drought has been serious, springs and wells have dried up and all crops have been injured. Turnips are being helped out by the late rains, but they are scarce and rather small.

PLYMOUTH COUNTY.

Brockton (DAVIS COPELAND). — The corn crop is about 50 per cent of the normal in value. Root crops are hardly up to the average. Farm stock is in good condition. Fall seeding has improved since the rains and is looking well. If anything prices are a little lower than usual. Potatoes have been our most profitable crop, and winter squashes our least profitable one. Considered as a whole, the season has not been very profitable. Drought gave vegetation a set back; streams and springs were low and many wells dry, but since the rains things are looking better.

Hanover (HARRISON L. HOUSE). — The value of the corn crop is from one-half to one-third the average. Root crops are good average yields. Farm stock is in good condition. Fall seeding is in good condition. Prices for crops raised for market have been about the same as usual. Potatoes are our most profitable crop, and corn our least profitable one. Considered as a whole, I think the season has been fairly profitable. Streams, springs and wells are rather lower than usual, but not as low as last year at this time.

Marshfield (JOHN H. BOURNE). — On the whole, the corn crop is less valuable than last year, but the large area planted and the favorable fall weather have produced a satisfactory crop. Root crops are below the usual average. Most pastures have suffered from drought and cattle are thin in flesh. Less land has been seeded than usual and it is not in normal condition. Prices for crops raised for market are fully as high as usual. Hay and apples have been our most profitable crops, and potatoes our least profitable one. If a farmer has been up to the times, understanding his business, it has been a good year, but if slack and negligent he will come out behind. Streams, springs and wells are low, and in many places grass has died.

Plympton (WINTHROP FILLEBROWN). — The corn crop has averaged about 90 per cent of the normal. Root crops have done extremely well. Farm stock is in excellent condition. Fall seeding suffered from lack of moisture. Prices of market crops are about as usual. Potatoes have been our most profitable crop, and corn our least profitable one,

although not a failure. It has not been a money-making year, as labor is too high in price and poor in quality. The water courses are lower this year than for many years, and vegetation has suffered badly in some locations.

Kingston (GEORGE L. CHURCHILL). — Indian corn is about a two-thirds crop. Root crops have proved to be up to the average. Farm stock is in very good condition. Fall seeding is in very fair condition, but there has been little done. Prices for crops raised for market have been fully up to the standard. Potatoes have been our most profitable crop, and beans our least profitable one. Considered as a whole, the season has been profitable. The drought has been severe, but conditions have now improved.

Lakeville (NATHANIEL G. STAPLES). — The corn crop is three-fourths of the normal in value. Root crops are average yields. Farm stock is in fair condition. Fall seeding is in good condition. Prices for crops raised for market are a little better than last year. Sweet corn has been our most profitable farm crop, and strawberries our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. The drought has been bad for vegetation, and water is very low in streams, springs and wells.

Mattapoisett (E. C. STETSON). — The corn crop is about 75 per cent of a normal crop in value. Root crops are hardly average yields. Farm stock is in quite good condition. Very little fall seeding has been done. Prices for crops raised for market are about the same as usual. Hay has been our most profitable crop, and onions our least profitable one. Considered as a whole, the season has not been a profitable one. Crops are light because of drought, and many wells and streams are dry.

BARNSTABLE COUNTY.

Falmouth (D. R. WICKS). — Corn is about up to a normal crop taken as a whole. Root crops are hardly normal yields. There is plenty of fall feed, and farm stock is in good condition. Fall seeding is in fairly good condition. Prices for farm crops are about normal, or a little better. The hay crop is our most profitable one, and potatoes and apples our least profitable ones. Taken as a whole, the season has been a profitable one. The drought has not affected the water supply, but it has made late peaches small in size and caused them to drop badly.

Mashpee (W. F. HAMMOND). — The corn crop is below the average. Root crops are up to the usual average. Farm stock is in good condition. Fall seeding is looking well. Prices for crops raised for market have been above the average. Cranberries have been our most profitable crop, and the corn crop has been our least profitable one. The season has been a profitable one for our farmers. The drought was very damaging to vegetation, and streams, springs and wells have been very low.

Barnstable (JOHN BURSLEY). — The corn crop is only 65 per cent of the normal in value. Root crops are below the usual average. Farm stock is in fair condition where fed a grain ration. Fall seeding is very small. Prices for market crops are 10 per cent higher than usual. Cranberries have been our most profitable crop, and potatoes and Cape turnips our least profitable ones. The season has been moderately profitable. Mowings are looking badly, because of drought; also, pastures and potatoes are a light crop.

Dennis (JOSHUA CROWELL). — The corn crop is probably 80 per cent of the normal in value. Root crops are something less than the average. Farm stock is in good condition. Full average prices have prevailed for crops raised for market. Cranberries have been our most profitable crop. The season has been a fairly profitable one. Springs and wells have been low, and vegetation, especially mowing lands and pastures, has suffered severely from drought, but shows a decided improvement with the recent rains and warm weather. Potatoes are of good size and quality, but not over 75 per cent of a normal yield. Cranberries have turned out better than was expected.

Orleans (FREEMAN E. SNOW). — The value of the corn crop was considerably lessened by drought. I think root crops are up to the usual average. Farm stock is in fairly good condition. Prices for crops raised for market have been good. Cranberries seem to have been as profitable as any crop. Asparagus has been our least profitable crop, except in a few cases. Considered as a whole, the season has been a little below the average for profit. Swamps and ponds are low; vegetation is showing signs of life; most of our wells are driven, and show no effects of an average drought.

Truro (JOHN B. DYER). — Indian corn is under the normal in value, but is very little grown. Root crops are giving average yields. Farm stock is in fair condition, perhaps above the average. Fall seeding is in fair condition, but little was attempted. Garden truck has brought good prices, the summer people making a good demand. Strawberries and garden truck have been our most profitable crops; asparagus was rather below the normal, potatoes have been nearly a failure, and apples have been quite a failure. The season has perhaps been an average one for profit. Vegetation was much affected by drought, but late rains have swollen springs and wells to normal. Cranberries are a good crop, but the prices have been low.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

THE FARM CENSUS OF 1910.

By WHITMAN OSGOOD, *Special Agent, Bureau of the Census, Washington, D. C.*

A GLANCE AT THE QUESTIONS TO BE ANSWERED.

The thirteenth decennial census of the United States will be taken beginning April 15, 1910. On that date some 65,000 enumerators will begin the huge task of counting every man, woman and child in the country, and of ascertaining for each individual his color, sex, age, conjugal condition, place of birth, place of birth of parents, number of years in the United States, citizenship, occupation, whether or not employer or employee, and, if employee, whether or not employed at the date of enumeration, and the number of months employed during the preceding calendar year.

All of this, and certain additional information, is a part of the census of population, and must be ascertained for every one, regardless of occupation. In addition, Congress has provided for the collection of detailed information regarding the three principal productive industries of the country, — agriculture, manufactures, and mines and quarries. These three great branches of industry represent so large a proportion of the total wealth of the country that their progress from decade to decade is an accurate index to the material development of the country as a whole.

The census of 1900 showed that the United States is still primarily an agricultural country. The total value of all farm property on June 1, 1900, was nearly twenty and one-half billions of dollars, — a sum more than twice that of the aggregate capital invested in manufactures, which was approximately \$9,800,000,000.

The State of Massachusetts is interested to a greater extent, financially, in manufacturing than in agriculture. In 1900 Massachusetts ranked seventh among the States of the Union in population, fourth in the value of its manufactured products, but dropped to thirty-first place in the value of its agricultural products. During the census year the State produced for every man, woman and child within its

borders \$15 worth of agricultural products and \$369 worth of manufactured goods. Of special significance, however, is the fact that in 1900 for every person over ten years of age engaged in agricultural pursuits in Massachusetts there was an average investment in farm property of over \$2,700, while the capital invested in manufacturing represented but slightly more than \$1,400 per capita for those engaged in that industry.

Notwithstanding the value of the census of population for the political purpose of reapportioning representation in the Congress of the United States, and the value of the statistics of manufacturing to the vast interests immediately concerned, the census of agriculture, of all the subjects covered by the census law, is generally regarded as of the greatest importance to the country.

Population increases naturally at a fairly constant rate, and can always be estimated, for the country as a whole, with a high degree of accuracy. Manufacturing in most of its branches is so highly organized and book records are so generally kept, that it is a comparatively simple matter to obtain from time to time accurate estimates of the capital invested and the value of the product. Agriculture, on the other hand, is the great unorganized industry with respect to book records of its operations. Upwards of 7,000,000 farmers are conducting farm operations on separate farms at the present time. Their products are marketed at all seasons of the year, under all sorts of local conditions, and at a widely varying range of prices. New lands, new crops, new methods and new processes are constantly modifying conditions in every branch of husbandry, and the net results of farm operations are affected thereby to an unknown extent.

The United States Department of Agriculture, with its splendid organization, keeps in the closest possible touch with every phase of farm life in all parts of the country. Its trained agents and reporters note everything that affects crops and live-stock conditions, and keep the department fully informed. Yet so vast is the industry and so intangible are many of the elements and conditions affecting the results of farm operations, that the crop and other estimates made by the Department of Agriculture, and which exert such a tremendous influence on market conditions, would quickly lose their significance and become practically valueless if they were not regularly revised in the light of the actual census returns.

Hence the importance of the farm census, and of striving for the greatest possible degree of accuracy in the data to be gathered. Aside from the fact that the census of agriculture supplies the data upon which all official estimates of farm products are based for the ensuing ten years, the information obtained is of great value from the educational standpoint. While comparatively few farmers make personal use of the large volumes of farm statistics issued by the Census Bureau, it should be borne in mind that the data thus published provide the

agricultural colleges and the great body of writers for the agricultural press and for economic periodicals with the facts upon which their most valuable studies and analyses are based. The wisdom of Congress, in constantly increasing the scope of the farm census from its real beginning in 1850 down to the present time, has done much to further the gradual development of farming in this country from a primitive "means of subsistence," in which every farmer sought to work out his salvation according to his own ideas, into a great national industry, highly organized and specialized and constituting a science in itself. The farm census is taken primarily for the benefit of the farmer, and upon the accuracy of the information given the enumerator by the farmer next April depends to a large extent the value of the statistical work to be carried on in the farmers' behalf during the next five years, not only by the Federal and State departments of agriculture, but by students of agricultural conditions in all parts of the world. To what extent the very marked increase during recent years in the cost of living, and especially in the cost of certain kinds of farm produce, is due to shortage in production, is a question of vital moment to a vast number of people. A complete and accurate census of farm areas, products and values will furnish data which, studied in connection with the revised population figures, should throw much light on the great question of our national food supply. The farmer and the urban consumer alike desire information along these lines. It lies with the farmer to provide it.

HOW CAN THE FARMER HELP THE CENSUS BUREAU?

By keeping an accurate account of his farm operations during the year ending Dec. 31, 1909, and by making an inventory on April 15, 1910, of all his farm possessions, the farmer can render the Census Bureau and the public at large an estimable service. It is not to be expected that farmers will ever keep as complete accounts as do manufacturers and merchants. The very nature of their occupation, the long hours, and the arduous labor of the summer months, are a partial bar to scientific bookkeeping. The fact that a large part of his daily bread is supplied from his own farm instead of being purchased out of cash on hand, naturally causes the farmer to place an uncertain value on the products consumed in his home. Nevertheless, a constantly increasing number of farmers are keeping accurate records of their daily receipts and expenses, and of the exact quantities of all classes of products grown or raised on their farms. Wherever such records are kept the census enumerators are able to obtain highly accurate reports without taking more than a few minutes of the farmer's time, and without troubling him to make difficult estimates.

In order that the great majority of farmers who do not ordinarily keep book records of their farm operations may be given an opportunity to familiarize themselves with the scope of the census to be

taken next April, an outline of the schedule is here presented. Every farm operator is strongly urged to study this outline carefully, and to write down the answer to each question as soon as the necessary information becomes available. When completed, the note book should be laid aside for reference when the enumerator calls.

SCOPE OF THE FARM CENSUS OF 1910.

Section 8 of the act authorizing the thirteenth census provides that :—

The schedules relating to agriculture shall include name, color and country of birth of occupant of each farm, tenure, acreage of farm, acreage of woodland and character of timber thereon, value of farm and improvements, value of farm implements, number and value of live stock on farms and ranges, number and value of domestic animals not on farms and ranges, and the acreage of crops planted and to be planted during the year of enumeration, and the acreage of crops and the quantity and value of crops and other farm products for the year ending December thirty-first next preceding the enumeration.

In accordance with this act, the Director of the Census, after calling into conference the proper officials of the United States Department of Agriculture and also leading authorities on agriculture from all sections of the country, sought and received many valuable suggestions from practical farmers regarding the specific questions to be asked. The schedule adopted is both simple and complete. Every question asked calls for information that is of genuine interest to all farmers.

The schedule may be divided into five parts, as follows :—

1. Personal information regarding the farmer.
2. General information regarding farm acreage, values and expenses.
3. A statement of the acreage, yield and value of all farm crops harvested in 1909, and of all animal products, — that is, dairy products, eggs, live stock sold, etc.
4. An inventory of all live stock, including poultry and bees, on hand April 15, 1910.
5. Miscellaneous information.

1. Personal Information.

Under this head, farmers will be asked to give their name, post office address, color or race, age, nation in which born, tenure, length of residence on farm, and, if a tenant, the name and address of the person from whom land is leased.

By obtaining the ages of farmers the census will be able to classify farm property by age periods of the operators, and thus show what proportion of all farm wealth is controlled by farmers under twenty-five years of age, between forty-five and fifty years of age, or for any other age period. The rate of gain in wealth as the farmers increase in age will be a general index to the profitableness of farming as an occupation in different sections of the country.

The question of tenure, from many standpoints, is one of the most interesting on the schedule. The three principal tenures are owner, cash tenant and share tenant. In 1880, for the country as a whole, 74.5 per cent of all farms were operated by their owners, 8 per cent by cash tenants and 17.5 per cent by share tenants. In 1900 the proportion of owners had fallen to 64.7 per cent, while cash tenants increased to 13.1 per cent and share tenants to 22.2 per cent. Massachusetts had an unusually large proportion of owners, — 91.8 per cent in 1880 and 90.4 per cent in 1900. During the same period, cash tenants increased from 6 per cent to 8.3 per cent of all, while share tenants decreased from 2.2 per cent to 1.3 per cent. Formerly the decrease in number of owners and the increase in number of tenants was deplored by many writers as an indication that farm lands were passing into the hands of capitalists, and that tenants had correspondingly less opportunity of becoming farm owners. Careful study and better census figures tend to disprove this theory, and the constant relative increase in the number of tenants is now believed to indicate that a steadily increasing number of farm laborers are rising through farm tenancy to farm ownership, and that a growing number of farm owners become independent in later life and retire from active management. Their lands thus become available for tenant farmers or farm laborers of the better class. In other words, tenancy is regarded as the stepping stone whereby young farm laborers ultimately become farm owners. By using the data regarding age of farmers in connection with the figures regarding tenure and occupations, much light will be thrown on this interesting question by the thirteenth census. For example, it will be possible to show whether or not there is an increase in the relative number of owners, or a decrease in the relative number of tenants and farm laborers, as the farm workers increase in age.

2. *General Information regarding Farm Acreage, Values and Expenses.*

Each farm operator will be required to state the total number of acres in his farm, and also the number of acres of improved land. The census defines a farm as all the land under the control or personal direction of a single individual or firm, upon which animals, fowls and agricultural products are raised or produced. The farm of a tenant, renter or cropper includes the land leased by him from others and farmed under his management or direction.

By improved land is meant all land regularly tilled or mowed, land temporarily pastured, land lying fallow, land in gardens, orchards, vineyards and nurseries, and land occupied by buildings. The number of acres of timbered land will also be called for, and special inquiries may be made concerning pasture land.

Farm Values. — Statements will be required of the value of all land in the farm, including buildings and improvements; the value of all buildings on the farm; and that of all implements and ma-

chinery belonging to the farm. In preparing statements of the value of these classes of property, it should be borne in mind that the figures desired are the values on April 15, 1910, and should be determined by carefully estimating the amounts that could be realized from sales under average conditions.

Farm Expenses. — Under this head inquiry will be made for the total amount expended for farm labor in 1909, exclusive of expenditures for house work. An estimate of the value of house rent and board furnished to laborers in addition to wages paid is also desired. Massachusetts farmers paid \$7,487,000 for labor in 1899, or a little less than \$200 per farm. In view of the marked rise in farm wages during the past ten years, it will be interesting to ascertain whether or not the average farmer is expending more for help than at the time of the last census.

A third question calls for the amount paid in 1909 for manure and other fertilizers. In 1899, \$1,320,600 was expended for this purpose by Massachusetts farmers, — an average of \$35 per farm. The average for the United States was only \$10 per farm.

A new question in farm census investigations calls for the amount paid in 1909 for hay, grain and other articles not raised on the farm, but purchased for feed of domestic animals and poultry. This inquiry is of exceptional importance in Massachusetts, where market gardening, dairying and poultry raising are so highly developed in the vicinity of the larger cities. Large quantities of feed are known to be purchased annually by farmers of the classes mentioned.

3. *Crops and Animal Products.*

Crops. — Four facts are required to be ascertained regarding each principal crop grown on the farm in 1909: the number of acres harvested; the quantity produced: the value of the product; and the number of acres sown or planted or to be sown or planted for harvest in 1910. The values given should be based upon prices received in the local markets.

The crops called for on the schedule are as follows: —

A. — Crops grown exclusively for their grain or seed: This class includes corn, oats, wheat, durum or macaroni wheat, emmer or spelt, barley, buckwheat, rye, Kafir corn and milo maize, rice, clover and other grass seed, flaxseed, peanuts, dry pease, common beans and dry soy beans.

B. — Crops grown exclusively for hay and forage: In this class are timothy; clover; timothy and clover mixed; alfalfa; millet and Hungarian grasses; other tame or cultivated grasses; wild, salt or prairie grasses; small grains cut green for hay; pease and beans cut green for hay; and coarse forage crops.

C. — Crops of sundry classes: Under this head are included potatoes, sweet potatoes and yams, tobacco, cotton, hemp, broom corn and hops.

D. — Crops grown for sugar or sirup: Sugar beets, sorghum cane, and sugar cane are the crops included in this class. The number of maple trees tapped in 1909 may also be asked.

E. — Fruits and nuts: For the principal kinds of orchard fruits, grapes, tropical fruits and nuts, farmers will be asked to give the number of trees and vines of bearing age; the number of young trees not bearing; the quantities produced or harvested in 1909; and the value of the products. The acreage, product and value of small fruits, including strawberries, raspberries, blackberries, currants, gooseberries and cranberries, are to be reported for the crop year 1909.

In 1899, Massachusetts produced fruits of all kinds to the value of \$2,700,000, — an average product exceeding \$70 per farm.

F. — Vegetables: The enumerator will ask for the acreage and values of all vegetables grown in 1909. Thirteen chief varieties are named on this schedule, and blank lines are provided for others not specified. In the case of small farm gardens, the products of which are used solely for home consumption, it is not expected that the area and value of each variety of vegetable can be given separately. Provision is made for reporting such gardens as a unit, giving only the total area and value. All truck farmers and market gardeners, however, will be called upon for detailed reports. The importance of market gardening in Massachusetts is shown by the fact that over five and one-half million of dollars worth of vegetables were grown in 1899, — an average production of nearly \$150 per farm.

G. — Fruit products: The quantities and values of cider, vinegar, wine, grape juice, olive oil and dried or evaporated fruits produced on the farm in 1909 are to be reported.

H. — Forest products: Nearly two million dollars worth of forest products were reported by Massachusetts farmers in 1900. It is probable that the coming census will ask two questions under this head, namely: The value (in lump sum) of all firewood, fencing material and other forest products cut in 1909 for farm consumption; and the value (in lump sum) of all firewood, logs, railroad ties, telegraph and telephone poles, material for fencing and barrels, bark, naval stores or other forest products cut in 1909 for sale, whether sold or on hand April 15, 1910, together with all amounts received in 1909 from the sale of standing timber on the farm.

Animal Products. — This is a general term, used to designate all products of the live stock industry.

A. — Animals sold alive and animals slaughtered: Inquiry will be made for the number of animals of each kind sold alive in 1909, and the amounts received; also for the number and value of all animals slaughtered on the farm, whether for home consumption or for sale. It is also desired that a careful record be kept of the number of animals of each kind purchased during the year, and the amounts paid for them. This is especially important in all cases where farmers purchase large numbers of cattle, sheep or swine for feeding purposes.

B. — Wool and mohair: A report of the number, weight and value of all fleeces of wool and mohair shown in 1909 will be required.

C. — Dairy products: To obtain an accurate statement of dairy products is one of the most difficult tasks of the census enumerator. The great majority of farmers, to whom the dairy is a comparatively unimportant feature of the farm, keep absolutely no account of the quantities of milk and butter produced, or of the quantities consumed at home. Estimates are necessary in most instances. If made on the spur of the moment, at the time the enumerator calls, such estimates are certain to be wide of the mark in many cases. Farmers are urged to give careful consideration to the questions which follow, and, if records are not kept, to prepare as accurate estimates as possible. This can be done much more easily now than next April, when nearly four months will have passed since the close of the census year. The following questions will be asked concerning the products of the year 1909 : —

Milk: —

Gallons produced.
Gallons sold.
Amount received from sales.

Butter: —

Pounds produced.
Value of product.
Pounds sold.
Amount received from sales.

Cream: —

Gallons sold.
Amount received from sales.

Butter fat: —

Pounds sold.
Amount received from sales.

Cheese: —

Pounds produced.
Value of product.
Pounds sold.
Amount received from sales.

Butter fat should be not confused with butter. The term is one used by creameries and cheese factories, who purchase milk on the test plan and base their price upon the number of pounds of butter fat per gallon of milk, as shown by the test.

D. — Poultry and eggs: The following questions will be asked concerning poultry products in 1909 : —

Value of all poultry raised.
Amount received from sales of poultry.
Dozens of eggs produced.
Dozens of eggs sold.
Amount received from sales of eggs.

The total value of the poultry and eggs produced in Massachusetts in 1899 was approximately \$4,000,000, or considerably more than \$100 per farm.

E. — Bees and honey: The only questions to be asked are the number of pounds and the value of honey and of wax produced in 1909.

4. *Inventory of Live Stock, Poultry and Bees on Hand April 15, 1910.*

The census classifications of domestic animals according to kind and age follow closely the classifications used by the United States Department of Agriculture and the principal live stock breeders' associations. The classification by ages is very simple, and it is hoped that farmers will observe it carefully. The portion of the schedule pertaining to live stock is here reproduced substantially as it will be given to the enumerators : —

ANIMALS.	Number.	Value.
Cattle: —		
Cows and heifers kept for milk, born before Jan. 1, 1909, .		
Cows and heifers not kept for milk, born before Jan. 1, 1909,		
Heifers born in 1909, .		
Calves born after Jan. 1, 1910,		
Steers born in 1909,		
Steers and stags not kept for work, born before Jan. 1, 1909,		
Cattle kept for work, born before Jan. 1, 1909,		
Horses: —		
Mares, born before Jan. 1, 1909,		
Geldings and stallions, born before Jan. 1, 1909,		
Colts, born after Jan. 1, 1909,		
Swine: —		
Hogs and large pigs, born before Jan. 1, 1910,		
Young pigs, born after Jan. 1, 1910,		
Mules: —		
Mules, born before Jan. 1, 1909,		
Mule colts, born after Jan. 1, 1909,		
Asses and burros (all ages),		
Sheep and lambs: —		
Ewes, born before Jan. 1, 1910,		
Rams and wethers, born before Jan. 1, 1910,		
Lambs, born after Jan. 1, 1910,		
Goats and kids (all ages),		

In addition to the information called for as above indicated, a statement is desired of the number of calves, lambs, colts, mule colts, kids and pigs brought forth on the farm during 1909. The number raised may be substituted for the number brought forth, when such number alone is known.

Farmers owning pure-bred animals that are registered or eligible for register may be asked to report the number of each kind, giving in each case the name of the breed. It is also probable that an inquiry will be made regarding the number of cows that were regularly milked for more than three months during 1909. This information will be of interest in connection with the report of dairy products.

Poultry. — A statement will be required of the number and value of chickens, turkeys, ducks, geese and guinea fowls on hand April 15, 1910. Separate reports may be required of those under three months old and those over that age.

Bees. — The number of swarms, hives or colonies of bees on the farm April 15, 1910, and a statement of their value, are to be called for.

5. *Miscellaneous Information.*

Mention is here made of certain possible inquiries that do not come naturally under the other general heads: —

A. — The amount of mortgage indebtedness.

B. — The number of acres of irrigated land and the method of irrigation.

C. — The number of acres of land leased to other farmers.

The outline of the farm schedule here presented is subject to certain minor changes before being finally adopted. It is believed, by those responsible for it, to provide for a fairly comprehensive exhibit of the farm products of the year 1909, and a complete inventory of farm property on April 15, 1910. Very explicit printed instructions, covering every inquiry, will accompany the schedule, and the enumerators who will call in person for the information will be carefully instructed on all questions that are likely to arise. The enumeration will not begin for six months. This gives the farmers of the country ample time in which to carefully review the results of their farm operations of 1909, and to prepare accurate answers to the questions that the census enumerator will ask.

The Director of the Census earnestly requests criticism of the schedule outlined above, and invites suggestions from all persons actively engaged in agriculture, not only with regard to the information to be secured, but with respect to its final presentation as well. With the practical co-operation of the farmers of the country in preparing in advance accurate records of their products and property the officials of the census of 1910 are confident of being able to present the most accurate and interesting statistics of agriculture ever published.





